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UNITED STATES DISTRICT COURT  
DISTRICT OF WASHINGTON  
TACOMA DIVISION

CASCADE FOREST CONSERVANCY,  
GREAT OLD BROADS FOR WILDERNESS,  
WASHINGTON NATIVE PLANT SOCIETY,  
SIERRA CLUB, DR. JOHN BISHOP, DR.  
JAMES E. GAWEL, AND SUSAN SAUL,

*Plaintiffs,*

vs.

UNITED STATES FOREST SERVICE,

*Defendant.*

Civ. Case No. 3:21-cv-5202

**COMPLAINT FOR DECLARATORY  
AND INJUNCTIVE RELIEF**

(Violations of the National Environmental  
Policy Act, 42 U.S.C. §§ 4321 *et seq*;  
National Forest Management Act, 16  
U.S.C. §§ 1600 *et seq*.; and the  
Administrative Procedure Act, 5 U.S.C.  
§§ 701 *et seq*)

**INTRODUCTION**

1. As an active volcano in the Pacific Ring of Fire, Mount St. Helens in Washington state is a powerful mountain—historically, geologically, culturally—for the United States and the world. The youngest and most violent of all the Cascade volcanoes, it is also the volcano most likely to erupt again. It is a place that has commanded the attention and resources of all levels of government—city, county, state and federal—and continues to command respect, curiosity, creativity and awe from humans who come in contact with its unpredictable, explosive potential.

2. Since 1800, only two volcanoes have erupted in the contiguous United States: Lassen Peak in May 1915 and Mount St. Helens in May 1980. When Lassen Peak erupted, few people witnessed it

1 and no humans died—and yet within a year the area became a national park. When Mount St. Helens  
2 erupted, the cataclysmic eruption killed 57 people and altered its surrounding forested landscape for  
3 230 square miles. Fifty bridges and miles of roads were destroyed as well as homes, lodges, youth  
4 camps and cabins. Countless animals—including black bears, elk, mountain goats, fish, beavers, river  
5 otters, cougars, martens, marmots and many species of birds and insects—were killed by the searing  
6 blast winds and suffocating ash. The area’s topography itself was changed: river drainages were filled  
7 with sediment and debris, new lakes were formed by blocked creeks, Spirit Lake was inundated with  
8 the volcano’s avalanching north face, and the mountain itself lost most of its glaciers and 1,300 feet  
9 in elevation. The May 18, 1980 eruption was viewed on television around the globe and consequently  
10 entered into Americans’ and foreigners’ imaginations alike as a powerful symbol of nature’s  
11 awesome force.

12 3. The volcano continued to erupt for six years, until 1986, then went dormant until 2004, when  
13 again news crews from around the world convened at Johnston Ridge Observatory. Erupting  
14 frequently from 2004 to 2008, the volcano added height to its dome at the heart of its crater. To this  
15 day, Mount St. Helens attracts thousands of visitors from around the world, and the ongoing 40-year-  
16 old scientific research conducted in the volcano’s blast zone is internationally significant. And yet  
17 this volcano is not a national park; it is administered by the U. S. Forest Service, whose main mission  
18 historically has been to oversee resource extraction such as logging in America’s national forests.

19 4. In 1982, the U.S. Congress created the 110,000-acre Mount St. Helens National Volcanic  
20 Monument (MSHNVM) to protect the main features of the blast zone—including Spirit Lake, the  
21 Pumice Plain, the Mount Margaret Backcountry, and the volcano itself. The monument’s mission is  
22 to protect the “geologic, ecologic, and cultural resources” and to allow “geologic forces and  
23 ecological succession to continue substantially unimpeded.” Another primary mission, according to

1 the language of the 1982 act, is to “permit the full use of the Monument for scientific study and  
2 research.” This mission was supported by the creation of a scientific advisory board that convened for  
3 ten years, as per the act.

4 5. Almost forty years later, the result of Congress’ designation is world-renowned research that  
5 has caused biology textbooks to be rewritten. The study of ecology has been turned upside down by  
6 research conducted in Mount St. Helens’ blast zone, especially on the Pumice Plain, the area between  
7 the volcano and Spirit Lake. Scientists’ previous hypotheses about how ecosystems get started from  
8 zero (which is what happened on the Pumice Plain, where all life was literally cooked to death by  
9 1,000-degree F. temperatures and buried by pyroclastic flows) had to be revised once scientists began  
10 documenting post-eruption life. For instance, old ecosystem models claimed that first plants arrived,  
11 then animals that ate those plants, then animals that ate animals. But one of the first organisms found  
12 on the Pumice Plain was a carnivorous beetle. Time and again, the study of ecology had to be revised  
13 with new and often startling discoveries scientists made at Mount St. Helens. Within several years of  
14 the monument’s creation, Mount St. Helens became an internationally known outdoor classroom that  
15 attracted entomologists, botanists, wildlife biologists, forest ecologists and other researchers from  
16 universities and research agencies around the United States.

17 6. The quality and quantity of research at the volcano has been unparalleled in the world, as well  
18 as the length of some of the studies—specifically, studies done on the Pumice Plain and Spirit Lake.  
19 For instance, numerous 40-year, ongoing studies on the Pumice Plain regarding how birds, small  
20 mammals, amphibians and mycorrhizae respond to explosive volcanism are unique in the world; no  
21 other research of this kind is done except at Mount St. Helens. A study on soil development (which  
22 began in 1980) is also unique in the world. Two new species of insects have been discovered on the  
23 Pumice Plain. Most compelling, perhaps, is the story of the first known plant to colonize the Pumice

1 Plain—the prairie lupine (*Lupinus lepidus*). Discovered in July 1981, this little wildflower has  
2 become the center of many other studies and has ignited the curiosity of the media, who have told its  
3 story in journals, books, magazines, newspapers and film documentaries. The study of lupine  
4 colonization is ongoing and, like other Pumice Plain research, is expected to continue for many  
5 decades. Scientists’ goals at Mount St. Helens are to understand how a universal feature of the Earth -  
6 large-scale volcanic disturbance - is linked to the formation and function of ecosystems and the  
7 services they provide to humans. Mount St. Helens is a unique opportunity to realize this goal, which  
8 can only be met by undertaking long-term research that spans several human generations.

9 7. Over the last decade, millions of dollars have been spent on Pumice Plain research. The U.S.  
10 Forest Service has funded significant portions of the research, as well as the National Science  
11 Foundation and universities around the world. Mount St. Helens’ research is globally significant,  
12 with scientists sharing data with their peers in other countries such as Chile, Argentina, Indonesia,  
13 and Iceland.

14 8. Today, in 2021, research continues on the Pumice Plain as well as in Spirit Lake and the  
15 streams draining into the lake from the plain. Studies concerning hydrology, environmental  
16 chemistry, biogeochemistry, limnology, phycology, aquatic entomology, fish genetics, and freshwater  
17 ecology are bringing dozens of undergraduates as well as several PhD candidates to the area to  
18 expand human knowledge of how organisms adapt and evolve in newly created aquatic ecosystems  
19 set in regenerating watersheds. Scientists are conducting cutting-edge research on the ecological role  
20 of floating woody debris, freshwater biofilms, invasive species impacts, and riparian ecology. Other  
21 scientists continue to document the development of bird, mammal, amphibian, insect, and plant  
22 communities of the Pumice Plain and conduct observations and experiments to identify the  
23 mechanisms that control their assembly, include novel work on topics such as the role of soil

1 microbiomes and anthropogenic nitrogen pollution. The cumulative knowledge gained at Mount St.  
2 Helens is nothing less than astounding—and its future is intellectually endless, as the volcano’s  
3 dynamic, ever-evolving landscape offers up new questions each year.

4 9. That the Forest Service would propose cutting a road through these studies and constructing  
5 an outsized beach landing in a sensitive riparian area is not only shocking but potentially tragic.  
6 Alternative B would destroy the 40-year sites, including the much-loved lupine site, where in 1981  
7 one wildflower announced to the world that life could return to the volcano’s hellish, blast-fired, ash-  
8 choked land. The proposed road would also destroy the site of the first willow to colonize a stream on  
9 the Pumice Plain near Willow Springs. The proposed road would not only harm the scientists’  
10 taxpayer-funded work and professions, it would be an incomprehensible, irreparable loss of an  
11 irreplaceable landscape, a loss to science itself, to the United States, and to the pursuit of human  
12 knowledge.

### 13 JURISDICTION

14 10. Jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 (federal question), 1346  
15 (United States as a defendant), 2201 (injunctive relief), and 2202 (declaratory relief). The current  
16 cause of action arises under the laws of the United States, including the Administrative Procedure  
17 Act, 5 U.S.C. §§ 701 *et seq.*; the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.*; and  
18 the National Forest Management Act, 16 U.S.C. §§ 1600 *et seq.*. An actual, justiciable controversy  
19 exists between Plaintiffs and Defendants.

### 20 VENUE

21 11. Venue in this Court is proper under 28 U.S.C. § 1391 because all or a substantial part of the  
22 events or omissions giving rise to the claims herein occurred within this judicial district. The Forest  
23

1 Service official who authorized and approved the decision is headquartered in Vancouver,  
2 Washington, which is located within this district. Plaintiffs have offices within this district.

3 12. This case is properly filed in Tacoma, Washington pursuant to Local Rule 3(e)(1) because the  
4 Gifford Pinchot National Forest Supervisor's Office and Mount St. Helens National Volcanic  
5 Monument are located in Skamania County, Washington, and the Spirit Lake Tunnel Intake Gate  
6 Replacement and Geotechnical Drilling Project ("Spirit Lake Project" or "Project")) is located on  
7 lands located in Skamania County, Washington.

8 **PARTIES**

9 13. Plaintiff CASCADE FOREST CONSERVANCY ("CFC") is a non-profit organization that  
10 supports the biological diversity and communities of the Southwest Washington Cascades through  
11 protection, conservation, and restoration of forests, rivers, fish, and wildlife. CFC has over 12,000  
12 members who reside in Oregon and Washington and has offices in Vancouver, Washington, and  
13 Portland, Oregon. CFC members hike, camp, view wildlife, conduct research, and enjoy the solitude  
14 and quiet of the public lands and waters at the project site, and otherwise use, enjoy, and learn from  
15 the land that will be impacted by the Project's road construction, trail closures, drilling, noise, heavy  
16 machinery, and impacts on research, wetlands, and watersheds. CFC members recreate and conduct  
17 research on the sites proposed for road construction and drilling, and the surrounding rivers and trails.

18 14. Plaintiff GREAT OLD BROADS FOR WILDERNESS ("GREAT OLD BROADS") is a  
19 national, non-profit organization led by women, that engages and inspires activism to preserve and  
20 protect wilderness and wild lands. Formed in 1989, Great Old Broads now has over 3,500 members  
21 in all 50 states who believe that wild places are valuable in their own right, who value the spirit and  
22 intent of national conservation legislation such as the Wilderness Act and the National Environmental  
23 Policy Act, and who support sound science as a basis for informed decisions. A primary goal of Great

1 Old Broads is to ensure that there will still be remote, untrammeled places left not just for our own  
2 grandchildren, but for those of all species. Throughout the country, Great Old Broads have  
3 conducted educational and advocacy activities on the conservation and stewardship of public lands,  
4 including monitoring of impacts of illegal motorized use, evaluating rangeland health, working with  
5 federal and state land management agencies on conservation stewardship and restoration projects,  
6 providing comments during public land planning processes, litigating on issues related to land use  
7 and cultural resource protection, participating in collaborative public land management efforts, and  
8 educating our members and the public about values of wilderness and public lands. Great Old Broads  
9 has members throughout the state of Washington, including four active grassroots chapters in the  
10 state. Members of the Great Old Broads were active in the formation of the Monument and have  
11 remained active in actions to protect the Monument from mining and other dangers. Great Old  
12 Broads members regularly visit the Mt. St. Helens National Volcanic Monument (Monument) and  
13 have hiked, camped and snowshoed in and around the Monument. Great Old Broads have monitored  
14 and worked to restore the Monument and the land around it, both in group activities and as  
15 individuals. Great Old Broads hiked in the Monument during their annual campout in 2014. Great  
16 Old Broads organized stewardship projects around the Monument in 2017 and 2019, including  
17 measuring trees subject to timber sales, setting cameras to document wildlife, and monitoring beaver  
18 habitat for potential release.

19 15. Plaintiff WASHINGTON NATIVE PLANT SOCIETY (“WNPS”) is a non-profit  
20 organization that promotes the appreciation and conservation of Washington’s native plants and their  
21 habitats through study, education, advocacy, and stewardship. WNPS has over 2,100 members who  
22 reside primarily in Washington State. It has an office in Seattle and twelve chapters throughout the  
23 state, including the southwest Washington Suksdorfia Chapter which covers the Mount St Helens

1 area. WNPS members are native plant enthusiasts, from amateurs to professionals. WNPS members  
2 are botanists, ecologists, foresters, teachers, naturalists, historians, photographers, foragers,  
3 gardeners, artists, poets, and writers. Members share their expertise with the residents of Washington  
4 through publications, public meetings, webinars, and field trips to view and study native plants on the  
5 state's public lands. They explore the outdoors and are inspired by Washington's sublime habitats,  
6 including the iconic landscapes of Mount St. Helens National Volcanic Monument. Their activities  
7 will be affected by the Project's road construction, trail closures, drilling, noise, heavy machinery,  
8 and impacts on research, wetlands, and watersheds. WNPS has members who teach and conduct  
9 research on the sites proposed for road construction and drilling and the surrounding rivers and trails.  
10 Further, WNPS is funding research that will be impacted, possibly permanently destroyed, by the  
11 Project.

12 16. Plaintiff SIERRA CLUB ("Club") is a non-profit organization that was formed in 1892 to  
13 explore, enjoy, and protect the planet. The Club supports the biological diversity of the Earth through  
14 protection, conservation, and restoration of forests, rivers, fish, and wildlife, and advocates for  
15 protecting wild lands such as at Mt. St. Helens National Monument. The Club has over 750,000  
16 members, of which 30,000 reside in Washington State and has offices in Seattle, Washington, and  
17 Portland, Oregon. Club members hike, camp, view wildlife, and enjoy the solitude and quiet of the  
18 public lands and waters at the Project site, and otherwise use, enjoy, and learn from the land that  
19 would be harmed by the Project's road construction, trail closures, drilling, noise, heavy machinery,  
20 and impacts on research, wetlands, and watersheds. Club members recreate on the sites proposed for  
21 road construction and drilling, and the surrounding rivers and trails.

22 17. The Club has advocated for protection of the natural area around Mt. St. Helens since the  
23 1930s. The Club participated in Forest Service land management planning for the area in the 1970s



1 and was a leader in the successful campaign to pass legislation establishing the National Monument  
2 in 1982. The Club advocated for provisions that ensured protection of natural ecological and  
3 geological processes, along with recognizing the importance of research and education in the  
4 management of the Monument. The Club was involved in early efforts to provide protection from  
5 flooding to downstream communities without compromising the natural landscape of the Monument,  
6 and continues to emphasize the need for ecologically and socially responsible public safety projects.  
7 The Club has continued to monitor the management of the Monument and has commented on  
8 numerous projects within and around the Monument, and has opposed proposals for open pit mines,  
9 highways across the Monument, and the currently proposed access road.

10 18. Plaintiff DR. JOHN BISHOP is Professor of Biological Sciences at Washington State  
11 University's campus in Vancouver, Washington. Dr. Bishop began conducting research activities on  
12 the Pumice Plain in June 1990, with an initial focus on the genetics of colonizing plants, and his  
13 research program there has run continuously for nearly 31 years. He has published 21 peer reviewed  
14 scientific articles from his work at Mount St. Helens, with many more in progress, has supervised or  
15 co-supervised 21 graduate students whose thesis or dissertation research focused on the Pumice Plain,  
16 and involved more than 140 other college students in this work. His research focuses on the  
17 mechanisms controlling the *de novo* development of plant communities and soils of the Pumice Plain  
18 and involves the regular survey of several hundred permanent plots on the Pumice Plain. Many of  
19 these same plots are used by collaborating Forest Service researchers to monitor bird populations.  
20 The proposed project would directly destroy or permanently alter the processes in dozens of these  
21 plots, effectively ending the effort to monitor long term evolution of this system. Dr. Bishop has been  
22 a board member of the MSHNVM's non-profit partner, the Mount St. Helens Institute, since 1999,  
23 twice serving as the president of its board of directors, with the goal of promoting the use of the

1 Mount St. Helens for STEM and cultural educational activities. Dr. Bishop and his family and friends  
2 also visit the project area frequently for recreational purposes, including climbing to the crater rim,  
3 skiing, botanizing, bird watching, and exploring the Monument's trails. Therefore, his career's work  
4 in research and education, and his personal well-being, would be irreparably harmed by the proposed  
5 actions.

6 19. Plaintiff DR. JAMES E. GAWEL is Associate Professor of Environmental Chemistry and  
7 Engineering in the School of Interdisciplinary Arts and Sciences at the University of Washington  
8 Tacoma. Research is an expectation for his position, and Dr. Gawel has carried out research on Spirit  
9 Lake since 2005, developing a nutrient mass balance model for Spirit Lake that quantifies external  
10 sources that feed the lake from the surrounding watershed. He currently leads an interdisciplinary,  
11 multi-university collaboration investigating the role of floating woody debris on the chemistry and  
12 ecology of Spirit Lake. Dr. Gawel's position also includes a significant undergraduate teaching  
13 expectation. He has brought students from the Tacoma campus, an institution with 56% first-  
14 generation college students and 59% students of color, to Spirit Lake and the Pumice Plain since  
15 2005 as a life-changing educational experience designed to motivate them to start careers in the  
16 natural sciences. Therefore, his research and education work is impacted by the proposed actions.

17 20. Plaintiff SUSAN SAUL is a volunteer citizen scientist and conservation activist who has been  
18 involved with Mount St. Helens for over 45 years. She first visited Spirit Lake and Mount St. Helens  
19 after moving to Longview, Washington, in 1974. She joined the Mount St. Helens Club in 1975 and  
20 hiked, backpacked, camped, berry-picked, cross-country skied, swam, and canoed at Mount St.  
21 Helens and Spirit Lake. As she explored the Mount St. Helens area, Ms. Saul became alarmed by the  
22 Forest Service's extensive road-building and logging creeping ever closer to the mountain and the  
23 Spirit Lake basin. She learned to be an activist as she wrote letters to the Forest Service and the local

1 newspaper regarding land management around Mount St. Helens. In 1977, Ms. Saul joined the Mount  
2 St. Helens Protective Association, an 80-member group that had formed in 1970 to press for national  
3 monument legislation for Mount St. Helens, and worked with the Association to seek political  
4 support for federal legislation. By 1980, she had taken a leadership role in the Association.

5 21. After Mount St. Helens erupted on May 18, 1980, Ms. Saul led the grassroots campaign to  
6 convince Congress that it needed to act quickly to protect the volcano and blast zone. As she told a  
7 reporter, “Land management decisions are being made with the bulldozer and chainsaw.” By autumn  
8 1981, Ms. Saul had convinced Representative Don Bonker, member of Congress for Washington’s  
9 Third District, that legislation would be the only way to settle the competing interests around Mount  
10 St. Helens. Under Bonker’s leadership, legislation moved quickly. Susan testified at congressional  
11 hearings in Washington, D.C. in March 1982, and field hearings in Kelso and Vancouver,  
12 Washington, in June 1982. By August 1982, compromise legislation for the 110,000-acre Mount St.  
13 Helens National Volcanic Monument had passed Congress with overwhelming bi-partisan support  
14 and was signed by President Reagan. The final bill incorporated language from the Association that  
15 made research a priority purpose of the monument and directed that the Forest Service “shall manage  
16 the Monument to protect the geologic ecologic, and cultural resources ... allowing geologic forces  
17 and ecological succession to continue substantially unimpeded.” Ms. Saul remains involved with  
18 management of Mount St. Helens, including leading campaigns to stop a proposed state highway in  
19 2000-2004 that would have crossed the Pumice Plain and to stop the State of Washington from  
20 opening Spirit Lake to recreational fishing in 2009. She hikes in the project area and enjoys botany,  
21 birding, observations of ecological succession, and the wildness of the landscape. She would be  
22 irreparably harmed by the project’s road construction and use, noise, dust, trail closures, and  
23 destruction of scientific research.

22. Defendant UNITED STATES FOREST SERVICE (“Forest Service”) is an agency within the U.S. Department of Agriculture. The Forest Service manages the Gifford Pinchot National Forest and Mount St. Helens National Volcanic Monument.

## LEGAL AND FACTUAL BACKGROUND

### The Administrative Procedure Act

23. The APA confers a right of judicial review on any person that is adversely affected by agency action. 5 U.S.C. § 702. Upon review, the court shall “hold unlawful and set aside agency actions ... found to be arbitrary, capricious, an abuse of discretion or otherwise not in accordance with the law.” 5 U.S.C. § 706(2)(A).

### The National Environmental Policy Act

24. Congress enacted the National Environmental Policy Act (“NEPA”) in 1969, directing all federal agencies to assess the environmental impact of proposed actions that significantly affect the quality of the environment. 42 U.S.C. § 4332(2)(C).

25. NEPA’s disclosure goals are two-fold: (1) to insure that the agency has carefully and fully contemplated the environmental effects of its action; and (2) to insure that the public has sufficient information to challenge the agency’s action.

26. The Council on Environmental Quality (“CEQ”) has promulgated uniform regulations to implement NEPA that are binding on all federal agencies, including the Forest Service. 42 U.S.C. § 4342; 40 C.F.R. §§ 1500 *et seq.* (1978).

27. NEPA requires that environmental information be available to public officials and citizens before agency decisions are made and before any actions occur to implement the proposed project. 40 C.F.R. § 1500.1(b). The information released must be of high quality and sufficient to allow the public to question the agency rationale and understand the agency’s decision-making process. *Id.*

28. If an agency is unsure if a federal action will have a significant effect on the human environment, it must prepare an Environmental Assessment (“EA”) to determine if a more detailed Environmental Impact Statement (“EIS”) is required. 40 C.F.R. § 1501.4.

29. For an agency’s decision not to prepare an EIS to be considered reasonable, a decision notice and finding of no significant impact (“DN/FONSI”) must contain sufficient evidence and analysis to show the decision is reasonably supported by the facts. The agency must show a rational connection between the facts found and the decision rendered. If the agency fails to consider important aspects of the problem in its EA, its decision is arbitrary and capricious.

30. To support a determination of non-significance, NEPA documents must consider the direct, indirect, and cumulative environmental impacts of a proposed action. 40 C.F.R. § 1508.8. Direct effects are caused by the action and occur at the same time and place as the proposed project. 40 C.F.R. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distances but are still reasonably foreseeable. 40 C.F.R. § 1508.8(b). Both types of impacts include “effects on natural resources and on the components, structures, and functioning of affected ecosystems,” as well as “aesthetic, historic, cultural, economic, social or health [effects].” 40 C.F.R. § 1508. Cumulative impact results when the “incremental impact of the action [is] added to other past, present, and reasonably foreseeable future actions” undertaken by any person or agency. 40 C.F.R. § 1508.7.

31. In determining whether a proposed action *may* “significantly” impact the environment, both the context and intensity of the action must be considered. 40 C.F.R. § 1508.27.

32. In evaluating intensity, the Forest Service must consider numerous “significance” factors including impacts that may be both beneficial and adverse; the degree to which the proposed action affects public health or safety; unique characteristics of the geographic area such as proximity to

1 historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or  
 2 ecologically critical areas; the degree to which the effects on the quality of the human environment  
 3 are likely to be highly controversial; the degree to which the possible effects on the human  
 4 environment are highly uncertain or involve unique or unknown risks; the degree to which the action  
 5 may establish a precedent for future actions with significant effects or represents a decision in  
 6 principle about a future consideration; whether the action is related to other actions with individually  
 7 insignificant but cumulatively significant impacts; the degree to which the action may adversely  
 8 affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National  
 9 Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or  
 10 historical resources; the degree to which the action may adversely affect an endangered or threatened  
 11 species or its habitat that has been determined to be critical under the Endangered Species Act of  
 12 1973; and whether the action threatens a violation of Federal, State, or local law or requirements  
 13 imposed for the protection of the environment. 40 C.F.R. §§ 1508.27(b)(1) – (b)(10).

14 33. In addition, “connected actions” are actions that “are closely related and therefore should be  
 15 discussed in the same impact statement. Actions are connected if they: (i) Automatically trigger other  
 16 actions which may require environmental impact statements; (ii) Cannot or will not proceed unless  
 17 other actions are taken previously or simultaneously; (iii) Are interdependent parts of a larger action  
 18 and depend on the larger action for their justification.” 40 C.F.R. §§ 1508.25(a)(1)(i) – (iii).

19 34. Similarly, “cumulative actions” are actions that “when viewed with other proposed actions  
 20 have cumulatively significant impacts and should therefore be discussed in the same impact  
 21 statement.” 40 C.F.R. § 1508.25(a)(2).

22 35. Connected and cumulative actions must be considered in the same environmental impact  
 23 statement along with a proposed action that may have significant environmental consequences.

**The National Forest Management Act**

36. The National Forest Management Act (“NFMA”) requires the Forest Service to develop comprehensive land and resource management plans (“LRMPs”) for each unit of the National Forest System. 16 U.S.C. § 1604(a).

37. Subsequent “plans, permits, contracts, and other instruments for the use and occupancy” of the national forests must be consistent with the local LRMP, in this case, the Gifford Pinchot National Forest Land and Resource Management Plan, as amended. 16 U.S.C. § 1604(i); 36 C.F.R. § 219.10(e).

38. If a site-specific project will not meet land and resource management plan requirements, Forest Service decision makers have four lawful options: 1) alter the project to comply with the land and resource management plan; 2) amend the land and resource management plan with a “project-specific amendment” that brings the plan into compliance with the site-specific project on a one-time basis; 3) amend the land and resource management plan with a “plan amendment” that amends the plan not only for the site-specific project in question, but also for all future projects; or 4) abandon the project.

39. In 2012, the Forest Service amended its regulations implementing section 1604 of NFMA. *See*, 36 C.F.R. Part 219 (“2012 Planning Rule”).

40. In 2016, the Forest Service further amended the 2012 Planning Rule to address the issue of amending LRMPs that had been developed using prior planning regulations. Forest Service, *National Forest System Land Management Planning, Final Rule*, 81 Fed. Reg. 90,723, 90,725 – 90,726 (Dec. 16, 2016).

41. When proposing a land and resource management plan amendment, and in order to comply with the 2012 Planning Rule as amended, “the responsible official is required to apply those

1 substantive requirements [of the 2012 Planning Rule] that are directly related to the plan direction  
2 being added, modified, or removed by the amendment. The responsible official must determine  
3 which substantive requirements are directly related to the changes being proposed based on the  
4 purpose and effects of the amendment, using the best available scientific information, scoping, effects  
5 analysis, monitoring data, and other rationale to inform the determination. The responsible official  
6 must provide early notice to the public of which substantive requirements are likely to be directly  
7 related to the amendment, and must clearly document the rationale for the determination of which  
8 substantive requirements apply and how they were applied as part of the decision document.” 81 Fed.  
9 Reg. 90,726; 36 C.F.R. § 219.13(b)(5) (the Forest Service “shall ... [d]etermine which specific  
10 substantive requirement(s) within §§ 219.8 through 219.11 are directly related to the plan direction  
11 being added, modified, or removed by the amendment,” and then “apply such requirement(s) within  
12 the scope and scale of the amendment”)

13 42. Responding to public comment on the 2016 amendment to the 2012 Planning Rule that  
14 suggested that the 2012 Planning Rule allowed the Forest Service to simply exempt a project from  
15 applicable forest plan requirements, the agency explained: “Other members of the public suggested  
16 an opposite view: That the 2012 rule gives the responsible official discretion to selectively pick and  
17 choose which, if any, provisions of the rule to apply, thereby allowing the responsible official to  
18 avoid 2012 rule requirements or even propose amendments that would contradict the 2012 rule.  
19 Under this second interpretation, some members of the public hypothesized that a responsible official  
20 could amend a 1982 rule plan to remove plan direction that was required by the 1982 rule without  
21 applying relevant requirements in the 2012 rule. This final rule clarifies that neither of these  
22 interpretations is correct. [Instead] the responsible official’s discretion to tailor the scope and scale of  
23 an amendment is not unbounded; the 2012 rule does not give a responsible official the discretion to



1 amend a plan in a manner contrary to the 2012 rule by selectively applying, *or avoiding altogether*,  
 2 substantive requirements within §§ 219.8 through 219.11 that are directly related to the changes  
 3 being proposed. Nor does the 2012 rule give responsible officials discretion to propose amendments  
 4 “under the requirements” of the 2012 rule that are contrary to those requirements, *or to use the*  
 5 *amendment process to avoid both 1982 and 2012 rule requirements (§ 219.17(b)(2)).*” 81 Fed. Reg.  
 6 90,725 (emphasis added).

7 43. A “substantive requirement” is “directly related” to the amendment when the requirement “is  
 8 associated with either the purpose for the amendment or the effects (beneficial or adverse) of the  
 9 amendment.” *Sierra Club, Inc. v. United States Forest Serv.*, 897 F.3d 582, 602 (4th Cir.), *reh’g*  
 10 *granted in part*, 739 F. App’x 185 (4th Cir. 2018) (*quoting* 81 Fed. Reg. 90,723, 90,731); *see also* 36  
 11 C.F.R. § 219.13(b)(5)(i) (“The responsible official’s determination must be based on the purpose for  
 12 the amendment and the effects (beneficial or adverse) of the amendment, and informed by the best  
 13 available scientific information, scoping, effects analysis, monitoring data or other rationale.”).

14 44. The 2016 amendment to the 2012 Planning Rule does not permit forest plan amendments that  
 15 simply eliminate forest plan requirements. Instead, site-specific forest plan amendments must: 1)  
 16 analyze the scope and scale of a project’s purpose and/or effects necessitating a forest plan  
 17 amendment (i.e., analyze “the purpose for the amendment and the effects (beneficial or adverse) of  
 18 the amendment, and informed by the best available scientific information, scoping, effects analysis,  
 19 monitoring data or other rationale”); 2) determine whether the proposed amendment is “directly  
 20 related” to the substantive provisions of the 2012 Planning Rule, e.g. 36 C.F.R. §§ 219.8 – 219.11; 3)  
 21 apply those substantive provisions of the 2012 Planning Rule to the amendment; and 4) create new  
 22 forest plan component(s) that address the same resource protection needs of the forest plan  
 23 component(s) that the proposed project cannot meet.

45. For the Spirit Lake Project, the Forest Service disclosed that the Project “would not be consistent with the management area category standard...designated visual quality objective of retention for the project area” without a project-level plan amendment.

#### **The Northwest Forest Plan**

46. In 1994, the Bureau of Land Management and the United States Forest Service issued a Record of Decision for the Northwest Forest Plan (“NFP”), which established management requirements for all Forest Service land within the range of the northern spotted owl and amended all National Forest LRMPs within the range of the owl, including the Gifford Pinchot National Forest LRMP.

47. The Aquatic Conservation Strategy (“ACS”) of the NFP was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them, and to protect salmon and steelhead habitat on federal lands.

48. The ACS accomplishes its goals through mandatory compliance with nine Aquatic Conservation Strategy Objectives (“ACSOs”).

49. The nine ACSOs are: (1) Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted; (2) Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species; (3) Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations; (4) Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland

ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities; (5) Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport; (6) Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected; (7) Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands; (8) Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability; and (9) Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

50. In order to make the finding that a project or management action “meets” or “does not prevent attainment” of the ACS objectives, project-level analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural variability.

51. The NFP states “Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not “meet” the intent of the ACS and thus, should not be implemented.”

1 52. The NFP also states “Do not use mitigation or planned restoration as a substitute for  
2 preventing habitat degradation.”

3 53. Riparian Reserves are a land allocation under the NFP covering “portions of watersheds  
4 where riparian-dependent resources receive primary emphasis and where special standards and  
5 guidelines apply.”

6 54. Riparian Reserves generally parallel “standing and flowing water, intermittent stream  
7 channels and ephemeral ponds, and wetlands,” and “also include other areas necessary for  
8 maintaining hydrologic, geomorphic, and ecologic processes” such as geologically “unstable and  
9 potentially unstable” areas.

10 55. “Riparian Reserves are used to maintain and restore riparian structures and functions of  
11 intermittent streams, confer benefits to riparian-dependent and associated species other than fish,  
12 enhance habitat conservation for organisms that are dependent on the transition zone between upslope  
13 and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and  
14 provide for greater connectivity of the watershed.”

15 56. The ACS and NFP require the Forest Service to identify seasonally flowing or intermittent  
16 streams, wetlands less than 1 acre, and unstable and potentially unstable areas and include a buffer  
17 around these areas that restricts and regulates management. “At a minimum, the Riparian Reserves  
18 must include: 1) The extent of unstable and potentially unstable areas (including earthflows); 2) The  
19 stream channel and extend to the top of the inner gorge; 3) The stream channel or wetland and the  
20 area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation;  
21 and 4) Extension from the edges of the stream channel to a distance equal to the height of one site-  
22 potential tree, or 100 feet slope distance, whichever is greatest. A site-potential tree height is the  
23 average maximum height of the tallest dominant trees (200 years or older) for a given site class.

1 Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable  
2 channel and evidence of annual scour or deposition. This includes what are sometimes referred to as  
3 ephemeral streams if they meet these two physical criteria.”

4 **The Gifford Pinchot National Forest Land and Resource Management Plan**

5 57. In addition to the Northwest Forest Plan, the Forest Service must comply with the  
6 requirements of the Gifford Pinchot National Forest Land and Resource Management Plan.

7 58. The Gifford Pinchot National Forest Land and Resource Management Plan includes a number  
8 of provisions pertaining to the management of Mount St. Helens National Volcanic Monument.

9 59. The Gifford Pinchot National Forest Land and Resource Management Plan places the  
10 Monument into Management Category A. The goal of Management Category A is to “Manage the  
11 Mount St. Helens National Volcanic Monument to protect the geologic, ecologic, and cultural  
12 resources, allowing geologic forces and ecological succession to continue substantially unimpeded.  
13 Permit scientific study, research, recreation, and interpretation, consistent with the provisions of the  
14 [Monument designation] Act.”

15 60. To protect the visual resources of the Monument, the Gifford Pinchot National Forest Land  
16 and Resource Management Plan sets the Visual Quality Objective as “retention.” The forest plan  
17 defines “retention” as “The most restrictive visual quality objective, wherein, management activities  
18 are not evident to the casual forest visitor.”

19 61. The environmental assessment for the Project states that the Project “would not be consistent  
20 with the management area category standard...designated visual quality objective of retention for the  
21 project area,” thus requiring an amendment of the Gifford Pinchot National Forest Land and  
22 Resource Management Plan.

**The 1980 Eruption of Mount St. Helens**

62. A magnitude 4.1 earthquake shook Mount St. Helens on March 20, 1980, prompting the immediate attention of scientists. No one realized it yet, but the volcano was awakening. Over the next days and weeks, the tremors became more and more insistent. Initial analysis indicated that these quakes were located beneath the north side of the volcano. Steam and ash rose from cracks in the summit's ice. Cracking and slumping became visible on the north side, which became known as the "bulge." By the end of April 1980, the bulge was growing outward at a rate of about five feet a day. New steam vents and hot spots appeared daily.

63. It was clear on the morning of May 18, 1980. At 8:32 A.M., a 5.1-magnitude earthquake shook the unstable north flank of Mount St. Helens. For the first few seconds the north flank seemed to ripple, appearing to almost liquefy. Then, most of the north flank suddenly broke loose and began a massive avalanche. Ash-rich eruption plumes rose faster than the speed of sound, growing into a lateral cloud that easily overtook the avalanche. The blast traveled as a hot, churning mass of gas, rock, ash and ice. As the avalanche continued downslope it was channeled by the topography of the landscape.

64. One tongue of the avalanche slammed into Spirit Lake, causing the water level to rise 200 feet as debris from the avalanche came to rest on the lake's bottom. Water surged 400 feet up ridges surrounding the lake and carried soil, toppled trees and volcanic debris into the lake. The bulk of the avalanche was deflected west down the North Fork Toutle River leaving behind a hummocky deposit of steaming hot rocks, debris and blocks of ice more than 600 feet deep in some places.

65. Meanwhile, the blast cloud of hot ash, rocks and large pieces of ice churned outward literally tearing apart the landscape. Within six miles north of the volcano, where dense forest had once stood, no trees remained. It appeared as though nothing living above ground had survived. Hot ash

1 continued to erupt out of the crater for nine hours. Pyroclastic flows of hot volcanic rocks, riding on a  
2 layer of gases, flowed down the volcano's flanks at speeds of 50-100 miles per hour, causing a  
3 number of mudflows and floods downstream all the way to the Columbia River.

4 66. The 1980 eruptions were destructive to biological life in a number of ways. The blast cloud  
5 and avalanche either toppled, covered, or removed everything in their path. Temperatures remained  
6 elevated for about an hour in the blast cloud, for some days in the mudflow, and for years in the  
7 pyroclastic flows. Chemical balances were disrupted by a lack of nitrogen and oxygen and increased  
8 acidity.

9 67. Many people wondered whether life would ever return to this seemingly lifeless  
10 "moonscape." Yet Mount St. Helens had seen eruptions before and had recovered. Scientists  
11 immediately saw the 1980 eruption as an opportunity to better understand nature's ability to survive  
12 and rejuvenate the landscape following catastrophic disturbance.

13 68. The 1980 eruption blocked Spirit Lake's natural outflow into the North Fork Toutle River.  
14 The U.S. Army Corps of Engineers ("Corps") mobilized to address flooding and the threat of debris  
15 blockage failures at Spirit Lake that would cause extensive flooding in the Toutle, Cowlitz, and  
16 Columbia Rivers. The Corps mobilized pumping of Spirit Lake in the fall of 1982 while it designed a  
17 more permanent solution. The Corps determined that a 1.6-mile, 11-foot diameter tunnel drilled  
18 through Harry's Ridge was the best option. Tunnel construction was completed in April 1985 and the  
19 Corps turned it over to the U.S. Forest Service to manage. The tunnel manages the lake level and  
20 prevents Spirit Lake from overtopping the landslide debris and volcanic material blockage.

**Designation of the Mount St. Helens National Volcanic Monument Act (PL97-246)**

69. For more than 100 years, conservation interests sought protection for Mount St. Helens from logging, mining, road building, and development through legislative protection in the face of opposition from the timber industry, and often the federal land management agencies.

70. Mount St. Helens was not initially included when the Rainier Forest Reserve was established by United States President Grover Cleveland in 1897 (all “Forest Reserves” later became National Forests in 1908 through an act of Congress). Mount St. Helens was only added to the Forest Reserve in 1907 after the Yacolt Burn of 1902 caused the timber industry to lose interest in the commercial value of the burned forests to the south of the mountain.

71. When the U.S. Department of Interior proposed a three-million-acre Ice Peaks National Park along the spine of the Cascade Mountains in Washington in 1937, including Mount St. Helens, the Forest Service and timber industry strenuously objected and the proposal was withdrawn in 1939.

72. The Pumice Plain and Spirit Lake, along with the crater, were included in every land conservation proposal (and some Forest Service designations) from 1937 to 1982. This includes proposals from the Forest Service, National Park Service, timber associations, recreation groups, and Washington State Government.

73. In the 1960’s, the idea of a national monument designation for Mount St. Helens first emerged in several articles published in *National Parks* magazine. Alarmed and frustrated by the ever-expanding logging and road building occurring around Mount St. Helens, local citizens formed the Mount St. Helens Protective Association in 1970. By 1972, the Protective Association had published their proposal, based on those 1960’s magazine articles, for a Congressionally-designated 85,000-acre Mount St. Helens National Monument to be managed by the National Park Service.



1 74. When their national monument proposal failed to achieve political support, the Protective  
2 Association announced a new proposal in 1978 for a 176,000-acre Mount St. Helens National Scenic  
3 Area to be managed by the Forest Service. The Protective Association initiated an outreach campaign  
4 to build public and political support for the legislation. This campaign was underway in 1980 as  
5 Mount St. Helens became volcanically active.

6 75. Following the 1980 eruption, Protective Association members, along with the Sierra Club and  
7 a coalition of conservationists, talked with scientists, studied reports, and sought on-the-ground tours  
8 to evaluate if and how to proceed with a legislative protection campaign. By January 1981, the  
9 Protective Association announced a new 216,000-acre Mount St. Helens National Monument  
10 protective proposal.

11 76. The Forest Service responded with its own 85,000-acre administratively designated  
12 “interpretive area” with the goal of returning the blast area to pre-eruption conditions as quickly as  
13 possible with an industry-friendly emphasis on logging, artificial replanting, geothermal leasing, and  
14 mining. The agency opposed federal legislation to protect Mount St. Helens.

15 77. The timber industry also opposed legislative protection for Mount St. Helens, and instead  
16 supported a small 40,000-acre interpretive area that would only include the volcano and Spirit Lake.  
17 The State of Washington, under the leadership of Governor Dixie Lee Ray, endorsed the industry  
18 proposal.

19 78. In June 1981, Washington’s new governor, John Spellman, combined elements from the  
20 Forest Service proposal with elements from the Protective Association’s proposal into a new state-  
21 supported proposal for a 110,410-acre federal legislative proposal comprised of a “national volcanic  
22 area” and a patchwork of provisions encouraging timber salvage, scientific study, and public  
23 recreation in the blast zone.

1 79. The Protective Association spent the rest of 1981 in an effort to convince Representative Don  
2 Bonker, whose Washington Third Congressional District included most of the volcano and blast  
3 zone, that legislation was needed. At the same time, private timber companies and the Forest Service  
4 raced to open up roads as quickly as possible in an attempt to salvage log timber blown down by the  
5 eruption with little regard to geologic and ecologic features created by the historic eruption. The  
6 Forest Service and the timber industry simultaneously opposed any legislation.

7 80. “All stakeholders were seeking my support, but I backed away from embracing any of these  
8 proposals,” Representative Don Bonker wrote in his 2019 memoir, *A Higher Calling: Faith &*  
9 *Politics in the Public Square*. He went on to describe his epiphany in the autumn of 1981: “Then I  
10 understood. The U.S. Forest Service, if it were to manage the areas around Mount St. Helens, it  
11 would need to be mandated by law. It was naive of me to think that NGOs and government agencies  
12 would simply act accordingly. I had to formalize the relationship and assert myself more  
13 proactively.”

14 81. As Rep. Bonker explained, “That spring (1982), I introduced the Mount St. Helens Volcanic  
15 Area, a land mass of 110,000 acres, which was essentially the concept found in Governor Spellman’s  
16 draft.” That bill was H.R. 5281.

17 82. Washington Representative Sid Morrison, Fourth Congressional District, also introduced H.R.  
18 5773, which was the timber industry proposal, but Congress never brought the bill to a vote. As a  
19 courtesy, Representative Bonker also introduced the Protective Association’s proposal as H.R. 5787  
20 without any sponsors. It also was never brought to a vote.

21 83. Research was barely starting on the Pumice Plain in 1982, yet members of Congress felt so  
22 strongly about the importance of research at Mount St. Helens that the Congressional committee  
23

1 chairs invited panels of scientists to testify at two hearings in Washington, D.C. and the several field  
 2 hearings in Vancouver and Kelso, Washington, regarding the three bills.

3 84. During witness questioning, a subcommittee chair asked with respect to the research  
 4 opportunity presented by Mount St. Helens, “Is there anything comparable in the United States for  
 5 scientific research?” Dr. Estella Leopold (Professor of Botany at University of Washington and  
 6 daughter of Aldo Leopold) responded, “There is nothing like it.” *Mount St. Helens National Volcanic*  
 7 *Area: Joint Hearings on H.R. 5281, H.R. 5773, H.R. 5787 Before the Subcomm. on Forests, Family*  
 8 *Farms, and Energy of the H. Comm. on Agric. and the Subcomm. on Pub. Lands and Nat’l Parks of*  
 9 *the H. Comm. on Interior and Insular Affairs*, 97th Cong., 2d Sess. 81 (1982) (colloquy with Virginia  
 10 Dale Adams, Ecology, Conservation Co-Chairperson, Wash. Native Plant Soc’y, Seattle, Wash.).

11 85. Representative Morrison said to the science panel, “First, let me describe my pride in all of  
 12 you. You as spokesmen for the scientific, academic community should be very proud of yourselves as  
 13 representatives of the quality of those efforts in the State of Washington. Did the Forest Service leave  
 14 you completely out of their considerations? Do they listen to you? Did you feel rejected by what they  
 15 came up with? Did they make any offering at all of areas to you that begin to satisfy your needs?”

16 *Mount St. Helens National Volcanic Area: Joint Hearings on H.R. 5281, H.R. 5773, H.R. 5787*  
 17 *Before the Subcomm. on Forests, Family Farms, and Energy of the H. Comm. on Agric. and the*  
 18 *Subcomm. on Pub. Lands and Nat’l Parks of the H. Comm. on Interior and Insular Affairs*, 97th  
 19 Cong., 2d Sess. 84 (1982) (colloquy with Virginia Dale Adams, Ecology, Conservation  
 20 Cochairperson, Wash. Native Plant Soc’y, Seattle, Wash.).

21 86. During the ensuing discussion, Dr. Steve Malone, geophysicist at the University of  
 22 Washington, explained to the Congress members that not many scientists had gotten permission to go  
 23 into the blast zone yet due to the volcanic hazards. Representative Morrison concluded, “If so, I

1 would hope that you might coalesce your thinking and organize your scientific community so that we  
 2 could provide the management mechanisms and controls that would give you the maximum  
 3 opportunities within the boundaries that we do select.” *Mount St. Helens National Volcanic Area:*  
 4 *Joint Hearings on H.R. 5281, H.R. 5773, H.R. 5787 Before the Subcomm. on Forests, Family Farms,*  
 5 *and Energy of the H. Comm. on Agric. and the Subcomm. on Pub. Lands and Nat’l Parks of the H.*  
 6 *Comm. on Interior and Insular Affairs, 97th Cong., 2d Sess. 86 (1982) (colloquy with Virginia Dale*  
 7 *Adams, Ecology, Conservation Cochairperson, Wash. Native Plant Soc’y, Seattle, Wash.).*

8 87. Following the hearings, Representative Bonker introduced H.R. 6530 on June 3, 1982 and  
 9 included six bipartisan co-sponsors from the Washington congressional delegation. Rep. Bonker  
 10 explained that “In July of that year, the House of Representatives passed my proposal which  
 11 protected 115,000 acres of lands around Mount St. Helens. A few days later, the Senate passed  
 12 legislation that protected 105,000 acres. S. 2133 sponsored by Senator Slade Gorton (R). During a  
 13 conference to reconcile the two bills, my staff remained constantly on the phone with Susan Saul and  
 14 the Sierra Club’s Charlie Raines, asking which acres were essential and which could be sacrificed. In  
 15 August, a final bill emerged calling for a monument of 110,000 acres. The House approved the bill  
 16 by a vote of 393 to 8 [on August 17, 1982]. The Senate passed it without dissent.”

17 88. Rep. Bonker explained that “The remaining difference came down to the single question of  
 18 which federal agency would have jurisdiction and essentially manage the newly created monument  
 19 area. The U.S. Forest Service was awarded the mandate, but as a separate unit set up for this with its  
 20 own planners and supervisor. The new law specified that it shall manage the Monument to protect the  
 21 geologic, ecologic, and cultural resources, allowing them to continue substantially unimpeded.”

22 89. President Ronald Reagan signed *An Act to designate the Mount St. Helens National Volcanic*  
 23 *Monument in the State of Washington*, Public Law 97–243 on August 26, 1982.

1 90. In designating Mount St. Helens a National Volcanic Monument, Congress and the President  
2 placed a substantial premium on the scientific value of the Monument. The Act designating the  
3 monument explains that “The Secretary shall permit the full use of the Monument for scientific study  
4 and research.”

5 91. The 1985 Comprehensive Plan prepared by the Forest Service for the management of the  
6 Monument explains that “The landscape and ecosystem within the Monument are of extremely high  
7 scientific importance. Opportunities for basic and applied research and for public education are  
8 unparalleled.”

9 92. The Plan identified a need to protect research plots and natural process areas by limiting  
10 access to the research area. “Broad scale natural features or processes with high scientific value are  
11 currently protected by the controlled access to the restricted zone and by limited access elsewhere in  
12 the monument.”

13 93. The Plan goes on to state that “A measure of the Monument’s significance to basic and  
14 applied research is the size of investments in facilities, programs, and monitoring activities that have  
15 been made in the area since March, 1980.” In 1983, those investments include the construction and  
16 operation of a number of visitor centers, the establishment of the Mount St. Helens Institute, the  
17 David A. Johnston Cascade Volcano Observatory, and millions of dollars in federal and nonfederal  
18 investment in research at the volcano. The Comprehensive Plan also explains that “more than 300  
19 studies involving over 500 scientists were in progress across the Monument and adjacent areas by  
20 October of 1982...The investment in Mount St. Helens research greatly exceeds that of major  
21 geological/ecological research sites elsewhere in the United States.” Such investments have only  
22 increased in the decades since the designation of the Monument.

1 94. The Plan also recognized that “The international importance of scientific work within the  
2 Monument is large. Numerous technical exchanges have occurred among scientists, engineers, and  
3 land managers from other countries; many have visited the mountain. Scientists contending with  
4 volcanic activity elsewhere – Indonesia, Japan, and Mexico – have availed themselves of hazard  
5 prediction and mitigation data gathered at Mount St. Helens.” The international importance of the  
6 research at Mount St. Helens has only grown since the 1980 eruption.

7 95. The Plan provided for the past, present, and future importance of the scientific work being  
8 done at Mount St. Helens, stating that “Scientific values at Mount St. Helens have been and will be  
9 increasingly recognized at both the national and international levels as the detailed record of  
10 geologic, hydrologic, and ecological events is compiled; it will provide a continuously improving  
11 foundation for future studies.”

12 96. The Monument was stratified into three zones based on each zone’s sensitivity to disturbance.  
13 The Pumice Plain was designated as Protection Class 1, which requires the Forest Service to manage  
14 the area so as to “Provide maximum opportunity for natural processes and features to continue  
15 unimpeded in the most sensitive areas.”

#### 16 **Scientific Research at Mount St. Helens and the Pumice Plain**

17 97. Scientific research began almost immediately after the 1980 eruption, and in many instances  
18 continues uninterrupted today. Much, if not all, of this research occurs nowhere else in the world: it is  
19 unique and irreplaceable, and has global importance and significance. Due to the scale of the  
20 eruption, its proximity to multiple colleges and universities, and the contemporary timing of the  
21 event, the research occurring on the Pumice Plain and in Spirit Lake is unique in its scope, breadth,  
22 and interdisciplinary nature. The research here is intimately tied to research throughout the Mount St.  
23

1 Helens National Volcanic Monument and serves as a critical laboratory for research throughout the  
2 world.

3 98. Much of the research occurring at Mount St. Helens includes research plots along the  
4 “volcanic disturbance severity gradient” created during the 1980 eruption of the volcano. This  
5 gradient includes the pyroclastic flow zone (i.e., Pumice Plain), debris avalanche deposit, blowdown  
6 forest/scorched forest zones, tephra fall zone, and lahars around the mountain. This disturbance  
7 severity gradient is unique because other research sites do not represent the full continuum of natural  
8 volcanic disturbances against which to evaluate natural processes. Many of these study plots are  
9 known as “end members,” which means they capture the extremes of the disturbance continuum.  
10 Research that includes or represents end members of the research design are the most critical to  
11 scientific understanding and therefore often are the most interesting scientifically: they are considered  
12 irreplaceable within the research community.

13 99. Nearly all aspects of terrestrial and aquatic ecology are under investigation at Mount St.  
14 Helens generally, and on the Pumice Plain and in Spirit Lake, specifically. For example, ongoing  
15 research into watershed creation and ecology; establishment and evolution of amphibian, fish,  
16 arthropod, mammalian, avian (bird), algal, and plant assemblages; soil creation and development;  
17 mycorrhizal ecology; primary plant succession, including genesis and growth of a new plant  
18 community; ecological role of floating woody debris on lake productivity; aquatic invasive species  
19 spread and ecological impact; and adaptation of a new rainbow trout population to changing  
20 conditions in Spirit Lake and its tributaries is currently occurring on the Pumice Plain and in Spirit  
21 Lake within the Project area.

22 100. The lateral blast of Mount St. Helens created five completely new watersheds on the north  
23 flank that are still actively evolving. Watershed creation of this magnitude and scale is of both

1 national and international importance and is globally unique. There are very few locations on Earth  
2 where scientists can watch stream systems form anew. Most streams and rivers are thousands to  
3 millions of years old, carving deep channels and canyons through landscapes. The watersheds in the  
4 blast zone are less than 40 years old and are still actively finding their channels, jumping channels,  
5 and developing the hydrological features of true streams.

6 101. For instance, only a few locations in two watersheds have started to develop what scientists  
7 would call true hyporheic zones (zones of saturated coarse rock and gravel that underlie stream  
8 channels and provide interchange between stream water and cooler groundwaters). Scientists were  
9 surprised to learn that hyporheic zones develop more slowly than above-ground channels, and this  
10 has never been demonstrated before. It will be important to continue to study these watersheds to  
11 determine when hyporheic zones develop at all sites. Changes to sediment regimes and flows due to  
12 repeated and unprotected road crossings will diminish scientists' ability to detect hyporheic  
13 development. In addition, streams are important conduits of organic matter, nutrients, plant seeds,  
14 and corridors for wildlife movement, and are therefore essential to the evolution of the entire Pumice  
15 Plain landscape. Research into these processes is thus irreplaceable.

16 102. Research regarding watershed creation and development is very important to scientific  
17 development regionally and internationally because of the extreme lack of existing research regarding  
18 in-stream community assembly and succession in young, evolving streams due to the rare nature of  
19 being able to observe these streams from a very early age: it is very difficult to study community  
20 assembly in young streams anywhere else in the world. The research on the watersheds and streams  
21 on the Pumice Plain has gained momentum due to a National Science Foundation grant to Dr. Carri  
22 LeRoy at The Evergreen State College 2018-2021. Through this newly developing research program,  
23 Dr. LeRoy has published several scientific research articles and incorporated over 20 undergraduate



1 students into the research and publication process. The simplified landscape of the Pumice Plain  
2 allows scientists to isolate factors, hone research questions, and complete targeted research projects to  
3 answer key questions about how watersheds develop, how riparian (streamside) plants might  
4 feedback to influence stream ecosystem function, and how plant genetics can influence stream  
5 ecosystem development. In most other locations, the forests along streams are too complex and plant  
6 communities too tangled to isolate factors like genetic variation easily.

7 103. Soil creation is a laborious process, taking place over millennia. The 1980 eruption reset the  
8 soil development clock, allowing scientists to learn how this little-known process occurs in real time.  
9 The soil research occurring here is pivotal to many other investigations at Mount St. Helens and  
10 elsewhere because soil creates the foundational resources from which biological communities  
11 develop and are supported. Soils provide critical primary habitat for many of the ground-dwelling  
12 animals studied by others at the Pumice Plain. The loss of this learning laboratory would devastate  
13 the research community.

14 104. Many research studies involve the very first plant colonist on the Pumice Plain after the 1980  
15 eruption: *Lupinus lepidus*, or alpine lupine. This showy wildflower is an efficient nitrogen-fixing  
16 plant, with many adaptations that allow it to thrive on young volcanic substrates. Research has  
17 encompassed many aspects of this plant, including its physiological and other adaptations to  
18 colonizing bare pumice, the factors affecting its spread across the Pumice Plain, including its  
19 specialist insect herbivores, and the keystone facilitative effect it has in promoting the formation of  
20 soil and vegetation. A new species of moth, *Filatima loowita*, currently known only from this species  
21 of lupin, was discovered from the Pumice Plain lupin population. The transects and plots in which  
22 these studies are ongoing would be permanently altered by the proposed actions. This research is  
23 occurring nowhere else in the world.

1 105. Sitka Willow was the first woody plant to colonize the Pumice Plain, and is now the most  
2 abundant woody species. The factors affecting its success and its influence on the developing Pumice  
3 Plain ecosystem have been the focus of much research. The first willows colonized at Willow  
4 Springs, a site that will be effectively destroyed by the project. Studies of willow-associated fungi,  
5 birds, and small mammals began shortly after the eruption and have continued to this day on plants  
6 within the project area.

7 106. With the support of National Science Foundation funding, in 2002 researchers established five  
8 east-west transects spanning the Pumice Plain, arrayed at 500m intervals, for the purpose of  
9 monitoring vegetation development in general, and the populations of willow and lupin in particular.  
10 Beginning in 2006, 25m radius plots along the transect were surveyed annually for 13 years to  
11 determine herbivore impacts on Sitka Willow.

12 107. Together with the study of lupin, this research represents the most thorough effort, world-  
13 wide, to quantify herbivore impacts following a volcanic eruption. The same plots are meticulously  
14 surveyed at intervals to characterize vegetation development, including an assessment the early  
15 establishment of coniferous forest species. They also have been surveyed nearly annually by the  
16 Forest Service for bird occupancy. This research has revealed rapid accumulation of plant species  
17 since 2007 and that conifer recruitment is strongly affected by local physical conditions. Researchers  
18 have learned that a stem boring weevil controls the development of plant communities and soils  
19 through its effects on willow. Understanding the long-term effect of these processes requires  
20 continued assessment of these transects. The Project would pass directly through approximately 10%  
21 of the plots on these transects, and alter ecological processes in many others, rendering them  
22 worthless for further study.

1 108. Similarly, genetic research underway on the origin of a population of fish in Spirit Lake will  
2 determine whether wild winter-run steelhead colonized the lake after the 1980 eruption. If this  
3 species is identified as wild winter-run steelhead, then the Spirit Lake population will be listed as part  
4 of the Lower Columbia River Distinct Population Segment of steelhead, a Threatened species  
5 protected by the Endangered Species Act. As a new contribution to this severely depressed Distinct  
6 Population Segment, this research is entirely unique and invaluable. This study is the single most  
7 thorough investigation of a fish population following intense volcanic disturbance in the world.

8 109. Another study investigating the biology of the putative winter-run steelhead population is also  
9 in progress. The fish only recently began rearing in the Pumice Plain streams, and the study of  
10 alternative life histories in the streams and Spirit Lake is ongoing. The study is linked to several other  
11 studies underway in Spirit Lake including: optical and chemical properties of the water; thermal  
12 regimes of the lake; phyto-and-zooplankton populations and communities; aquatic macroinvertebrate  
13 communities; aquatic macrophyte communities; amphibian communities; invasive aquatic species;  
14 and ecosystem processes of the floating log raft in the lake.

15 110. This study of the potential wild steelhead is tightly coupled to stream ecology research that  
16 includes biotic components such as algal primary productivity; riparian vegetation; aquatic  
17 macroinvertebrate community structure; algal community structure; and physical characteristics  
18 including spatio-temporal water flow, temperature regime, suspended sediment and bedload, water  
19 quality (i.e., turbidity, dissolved oxygen, specific conductance), channel dynamics, substrate types,  
20 and extent of embeddedness.

21 111. A study on bird diversity on the Pumice Plain is unique in that it is the only study of its kind  
22 in the world that looks at avian responses to explosive volcanism along a disturbance severity  
23 gradient: one that ranges from the modest effects of tephra fall where avian survival was high, to the

1 areas subjected to the extreme forces of pyroclastic flows that obliterated all pre-eruption ecosystem  
2 components and the assembly of biological communities. New avian communities have been  
3 naturally initiated upon a stark and barren terrain devoid of all life; but we do not yet know how or  
4 why: questions this research will answer. The length of this study – 40 years and still ongoing – sets  
5 it aside globally from all other studies of avian responses to any form of large, intense forest  
6 disturbance; there is nothing else like this study anywhere on the planet. This study on birds is, by  
7 intentional design, linked to other studies at Mount St. Helens, including those investigating small  
8 mammals, insects, spiders, micrometeorology, vegetation, soils, and fungi. This study has formed the  
9 basis for scientific presentations, training sessions, and at least one PhD dissertation, and is currently  
10 used for comparative studies in Chile.

11 112. Small mammal research is currently the basis for numerous scientific publications and  
12 graduate student degrees, and is also actively used for comparative studies in Chile and in Argentina.

13 113. A Pumice Plain study on amphibians is the single most thorough investigation in the world of  
14 amphibian responses to volcanism, and more broadly to any form of large intense forest disturbance.  
15 As such, this study has formed the basis for numerous scientific publications and graduate student  
16 degrees, and is currently used for comparative studies at three contemporary eruption sites in Chile  
17 and has informed studies at Merapi volcano in Indonesia.

18 114. Similarly, an ongoing study on arthropods is among a very small list of long-term  
19 investigations focused on ground-dwelling arthropod responses to volcanism. The study of arthropod  
20 succession relates to vegetation successional processes through populations of herbivores, pollinators,  
21 predators, and decomposers; and arthropods, in turn, provide food resources for amphibians, reptiles,  
22 birds, and mammals, all of which are being studied simultaneously on the Pumice Plain. Hence, all of  
23 these related studies are interconnected with the arthropod research. The arthropod study is currently

1 used for comparative studies at three contemporary eruption sites in Chile by the same researchers,  
2 and forms the bases of comparative work by other scientists in Chile and Argentina.

3 115. Arthropods, which are invertebrate animals such as insects, spiders or crustaceans, are also  
4 indicators of, and contribute to, soil development through primary succession, which is also being  
5 studied on the Pumice Plain. This soils research, which involves studying the creation and  
6 development of soils, has formed the basis for doctoral dissertations, numerous scientific  
7 publications, and book chapters. Information based on this research is currently used for comparative  
8 studies of agriculture, forestry, and mining at several locations in the United States and  
9 internationally, and is contributing to our general understanding of succession after volcanic  
10 disturbance.

11 116. Relatedly, research on mycorrhizae – fungi that grow in association with the roots of plants in  
12 a symbiotic or mildly pathogenic relationship – on the Pumice Plain is the single most thorough  
13 investigation of the role of mycorrhizae following volcanism in the world. This long-term research is  
14 currently used for comparative studies for agriculture, forestry, and mining at several locations  
15 domestically and abroad.

16 117. Another long-term study provides the longest record of plant community development, and is  
17 the only study that has intentionally focused on relationships between plant community development  
18 and soil genesis. As such, this site has attracted the attention of numerous other investigators who  
19 have established additional studies at this plot linking ongoing work to insect, spider, small mammal,  
20 herbivory, and mycorrhizae studies. It has formed the bases for numerous scientific publications and  
21 at least one PhD dissertation.

1 118. These and other studies currently ongoing on the Pumice Plain are linked to other studies of  
2 global significance located in Chile, Argentina, Iceland, and Japan, among other international  
3 locations.

4 119. Many of these studies began shortly after the 1980 eruption and have continued uninterrupted  
5 since then. Many studies are designed to continue for several additional decades or with no predicted  
6 end date given the unparalleled nature of the studies and the robust and extensive data coming from  
7 them. Some studies were designed to capture data for at least 100 years, because both at the time  
8 these studies were commenced, and today, there was no other opportunity to observe the natural  
9 processes, undisturbed by human development, at work at this scale anywhere else in the world.

10 120. Given the dynamic nature of the ecosystem under investigation, many of the ongoing studies  
11 at Mount St. Helens and the Pumice Plain could continue indefinitely: as more information is  
12 gathered, it gives rise to new questions that can be answered only by continuation of the research.

13 121. Much, if not all, of the research that would be affected by the Project would cease to occur if  
14 the Project is implemented because the Project would interfere with the fundamental nature of the  
15 research by destroying research plots that are essential to the study design and questions under  
16 investigation and by changing the processes under investigation in an area much larger than the direct  
17 impact. Other adverse and permanent effects to ongoing research are also expected.

18 122. For example, construction of the proposed road across the Pumice Plain will destroy and  
19 fatally compromise research plots that are located on or adjacent to the road right-of-way. Some of  
20 these plots are irreplaceable. For example, one study is based on a single plot at the location of the  
21 first known plant to establish on the Pumice Plain, which became the epicenter of revegetation: the  
22 proposed route for the road would go directly through this plot, destroying it. Without this plot, the  
23 entire nature of the study would be irreparably compromised.

1 123. Within the road right-of-way and vicinity, road construction and operation will alter  
2 hydrology; destroy native vegetation utilized for wildlife food and habitat; create unnatural noise  
3 disturbances; cause immediate and delayed mortality of living biota; increase dust delivery to study  
4 sites; increase the likelihood of the introduction, establishment, and spread of terrestrial and aquatic  
5 invasive nonnative species; cause erosion of the upslope and downslope; and increase sedimentation  
6 of waterways, potentially impacting juvenile and adult fish in the streams.

7 124. Seeps, springs, wetlands, and streams located along the Truman Trail where the Project road  
8 would be located are most at risk because of direct effects associated with road construction. Other  
9 seep, spring, wetland, and stream sites/reaches located downslope/stream of the proposed road will be  
10 subjected to altered sediment delivery regimes (e.g., timing, frequency, amount), which may trigger a  
11 host of changes both within channel and to adjacent riparian habitats (e.g., substrate embeddedness,  
12 changes in substrate particle size distribution, riparian vegetation, channel migration, turbidity, water  
13 chemistry).

14 125. Importantly, most of the streams in the Pumice Plain have not been colonized by the highly  
15 invasive New Zealand mud snail. There is a distinct increase in risk of spreading the snail into new  
16 aquatic habitats due to road construction, core drilling, water pumping for drilling operations,  
17 nearshore heavy equipment work, and increased human traffic. If introduced to these systems, the  
18 New Zealand mud snail would cause sweeping, irreversible changes to resource availability for fish  
19 and other aquatic life, including prey availability and spawning habitat quality, that would negatively  
20 influence survival and growth of wildlife. Fish fed a diet of New Zealand mud snails have been  
21 shown to lose weight as the snails survive intact as they pass through the gut, thus lowering the  
22 fitness of individuals and populations of fish.

1 126. Dredging Spirit Lake, which is already infested with the New Zealand mud snail, would aid  
2 the spread of the snail and thus alter the lake ecology in ways that would reduce fish fitness. Boat  
3 and/or barge lake travel and movement of personnel and equipment will increase the risk of spreading  
4 the New Zealand mud snail in Spirit Lake, and also increase the risk of chemical and/or petroleum  
5 contamination.

6 127. Similarly, inadvertent but highly probable introduction, establishment, and spread of non-  
7 resident terrestrial arthropod species from vehicle traffic will statistically confound natural  
8 successional processes of species arrivals on the Pumice Plain (i.e., researchers will not be able to  
9 separate natural changes in arthropod community composition from artificial introductions to the  
10 sites from vehicle traffic), essentially nullifying current data collection and requiring abandonment of  
11 the attendant studies.

12 128. Likewise, unintentional but highly probable introduction, establishment, and spread of non-  
13 resident plants from passing vehicles and workers will statistically confound research regarding plant  
14 succession on the Pumice Plain. Off-site rock for road construction and other maintenance activities  
15 is another source of invasive, nonnative plant species that would compromise ongoing research.  
16 Should non-native species be introduced as a result of the Project, affected studies would be  
17 abandoned.

18 129. In sum, Project implementation would preclude the ability of researchers to distinguish  
19 between change taking place in response to the 1980 eruption (and natural secondary disturbances)  
20 and those caused by Project implementation. This would destroy an exceptional and unique natural  
21 experiment and squander an opportunity for learning that benefits both science and society. The  
22 anticipated unmitigated negative effects of the proposed action would sharply reduce the value of  
23 scientific study at Mount St. Helens that has been premised on natural recovery, and in most cases



1 would preclude the need for its continuation. Researchers would be forced to wait for the next  
2 eruption of a volcano in close proximity to colleges, universities, agencies, and non-profits to  
3 continue to learn about the natural development of ecosystems 40-years after a massive volcanic  
4 eruption.

5 130. When queried, the scientific community working on the Pumice Plain very clearly responded  
6 that the Project would have “devastating” and “permanent” consequences on research occurring  
7 there, resulting in its “total loss” in many cases.

8 131. Aquatic researchers explained that the Project would compromise Pumice Plain streams,  
9 seeps, wetlands, and springs that form the primary spawning and rearing habitat for aquatic species,  
10 and thus represent recruitment sources for the lake population of aquatic wildlife. Because Pumice  
11 Plain sites form the foundational work of documenting and understanding amphibian community  
12 assembly under primary successional conditions and serve as the extreme end-point of the  
13 disturbance gradient, disruption of the physical environment from the Project would be “devastating”  
14 to the research, resulting in its abandonment. Any increase in the likelihood of spreading the New  
15 Zealand mud snail would impose permanent changes to the aquatic ecosystem, rendering those  
16 systems useless for further study.

17 132. Terrestrial researchers explained that research on the Pumice Plain forms the foundational  
18 work of documenting and understanding mycorrhizal associations and roles, as well as ground-  
19 dwelling arthropod, avian, and mammalian community assemblages under primary successional  
20 conditions. Loss of these sites would render much of the ongoing research useless, and would  
21 compromise future work here that is dependent on extremely limited human intervention.

22 133. Researchers clearly informed the Forest Service that the Project would “effectively end our  
23 research at Mount St. Helens.”

1 134. In addition to the cessation of ongoing irreplaceable research, the Project would also result in  
2 the loss or abandonment of complementary, related activities. For example, student education  
3 activities and volunteerism associated with the research would be abandoned if the purpose of such  
4 outreach – scientific research – was also abandoned. Researchers would no longer employ or provide  
5 internships, summer fieldwork, or year-long lab work for undergraduate students, which represent  
6 full- to part-time jobs for these students. The loss of researcher funding due to the compromise of  
7 their studies or their study designs could compromise the reputation of research teams, as well as  
8 future opportunities for funding for their research. Current National Science Foundation grants are at  
9 risk. Training for undergraduate and graduate students, and annual naturalist training for the Forest  
10 Service and Mount St. Helens Institute interpretative staff, would be severely compromised. The  
11 Science and Arts Pulse field conference - held every 5 years since 1990 and typically attended by  
12 more than 100 scientists, writers, and artists - would be diminished and damaged. The provision of  
13 field trips to the site for alumni, donors, grantors, politicians, artists, and recreationists, as well as  
14 seminars by researchers, and future educational and volunteer opportunities, would be at risk.

15 135. The Project would irreparably damage one of the most popular trails in the Monument, the  
16 Truman Trail (named after Harry Truman who lost his life in the eruption). The construction of a  
17 road along the route of this trail would damage the experience of hikers and the most popular access  
18 trail to the Pumice Plain.

19 136. The Project would disrupt the activities of the Mount St. Helens Institute (MSHI), a 501(c)(3)  
20 educational organization whose mission is to advance understanding and stewardship of the Earth  
21 through science, education, and exploration of volcanic landscapes. Many of MSHI's field trips and  
22 educational programs for youth and adults visit the Pumice Plain and will be disrupted by the project  
23 activities. For example, the GeoGirls program is a week-long camp for middle school girls that often

spends part of its time visiting the Pumice Plain, usually in the exact area of the Project, to introduce girls to the most intensively disturbed and unique area of the Monument. The High School Stem program pairs high school groups with scientists working on the Pumice Plain in the vicinity of the Project. The MSHI's popular Crater View and Into the Crater Hikes traverse the project area and are constantly within sight of it. These experiences will be diminished or perhaps made impossible for years by the noise, dust, traffic, drilling, and damage caused by the project.

137. Moreover, the research occurring on the Pumice Plain has been used since the 1980 eruption to educate the public about the volcano. The loss of this information poses a real risk to the public's collective understanding of volcanism, disturbance, regeneration, and other geologic and biological processes. It also compromises the Forest Service's mission to "Care for the Land and Serve People," because the agency can do neither without scientific research and information about the very subject of the public's attention: Mount St. Helens.

138. In addition to the irreplaceable scientific knowledge gained by the unique research occurring on the Pumice Plain, the research represents millions of dollars of investment by federal and nonfederal sources over the past 40 years. Past and current investment will be lost and future investment will be forgone if the research is not allowed to continue unimpeded.

#### **Long-Term Management of Spirit Lake and the Pumice Plain**

139. The eruption of Mount St. Helens in 1980 resulted in a massive debris avalanche and pyroclastic flow causing sweeping changes to the entire north flank of the mountain. The eruption delivered approximately 3 billion cubic yards of sediment into the Toutle, Cowlitz, and Columbia rivers, killed 57 people, and drastically changed the physical and socio-economic landscape.

140. The eruption material formed a natural dam that blocked the outlet of Spirit Lake, where it had previously flowed into the North Fork Toutle River. Blown-down timber that entered the lake

1 resulted in a floating log mat that still occupies about 20 percent of the lake surface. The Forest  
2 Service estimates that should the natural dam breach, Spirit Lake could release downstream more  
3 than 300,000 acre-feet of water and 2.4 billion cubic yards of sediment.

4 141. In 1982, at the direction of the President and the Federal Emergency Management Agency,  
5 the U.S. Army Corps of Engineers (the Corps), in consultation with the Forest Service, responded to  
6 the potential threat of a catastrophic breach or overtopping of the debris avalanche by establishing an  
7 interim pumping station in the southwest corner of Spirit Lake. This temporary measure to stabilize  
8 the lake level included a barge-mounted pumping facility, an access road from Windy Ridge (across  
9 the debris avalanche), workshops and short-term housing, and an area for storage of thousands of  
10 gallons of fuel.

11 142. To assess possible lake-level control measures, the Corps completed an environmental impact  
12 statement in April 1984. The selected alternative was the current tunnel through Harry's Ridge,  
13 which drains water from Spirit Lake into South Fork Coldwater Creek, a tributary of the Nork Fork  
14 Toutle River.

15 143. Work on the tunnel began in July 1984 and was completed by April 1985. The constructed  
16 tunnel, built under emergency conditions, is approximately 1.6-miles long and 11 feet in diameter,  
17 with a slightly narrowed diameter in some areas with tunnel lining reinforcement. To construct the  
18 tunnel intake gate at Spirit Lake, the Corps graded and used a primitive road from Windy Ridge  
19 (across the debris avalanche) to access the lake shore near the pumping station, then barged the  
20 cranes and other heavy equipment across the lake.

21 144. Despite the overall success of the existing tunnel, major repairs in 1995, 1996, and 2016  
22 required extended closures of the tunnel gate and outlet flow, which allowed the lake to rise to the  
23 maximum safe operating level.

1 145. In 2018, “At the request of the USFS, the National Academies of Sciences, Engineering, and  
2 Medicine convened a committee to develop a decision framework to support the long-term  
3 management of risks related to the Spirit Lake and Toutle River system in light of the different  
4 regional economic, cultural, and social priorities and the respective roles of federal, tribal, state, and  
5 local authorities, as well as other entities and groups in the region (referred to herein as interested and  
6 affected parties). In addition to developing a decision framework, the committee was asked to  
7 consider the history and adequacy of characterization, monitoring, and management associated with  
8 the Spirit Lake debris blockage and outflow tunnel; to consider other efforts to control transport of  
9 water and sediment from the 1980 and later eruptions; and to suggest additional information needed  
10 to support implementation of the recommended decision framework. The committee was also asked  
11 to identify alternatives that might be considered for long-term management of water and sediment  
12 transport within the Spirit Lake and Toutle River system. The statement of task does not call for the  
13 committee to quantitatively examine the viability of long-term management alternatives. Instead,  
14 regional authorities, guided by the proposed decision framework, would perform detailed analyses  
15 later. The committee concluded that such an examination could include a quantitative risk  
16 assessment, benefit-cost analyses, and analyses of other data.”

17 146. The 2018 National Academy study made numerous recommendations to the Forest Service  
18 about the short- and long-term management of Spirit Lake, the Pumice Plain, and the surrounding  
19 area affected by the 1980 eruption. While the report recognized that “a certain sense of urgency  
20 regarding the Spirit Lake outflow tunnel exists given the present need for further repairs,” the  
21 Academy was clear that short-term fixes were insufficient to address the long-term needs of the  
22 Monument, and that a piecemeal solution was destined to fail.

1 147. Instead, the Academy observed that “whereas the dangers posed by natural hazards still exist,  
2 other consequences—such as those related to ecological conditions, economic interests, or  
3 recreational opportunities—also concern the community. If there is a desire to be responsive to the  
4 priorities of the region’s interested and affected parties, then those other priorities cannot be ignored.  
5 Recognizing the various risks and their relationships to community priorities may be a first step in  
6 understanding the Cowlitz Indian Tribe’s concept of “living with the volcano.”

7 148. In short, the Forest Service needed then, and still needs now, a long-term, comprehensive,  
8 science-based solution for management of Mount St. Helens.

9 **The 2018 Spirit Lake Motorized Access for Core Sampling and Inlet Access Project**

10 149. The Forest Service initiated the Spirit Lake Motorized Access for Core Sampling and Inlet  
11 Access Project in 2017, completing its analysis in 2018 (2018 Project). The 2018 Project originally  
12 had two purposes: (1) provide motorized utility-terrain vehicle access to the lake shore where Forest  
13 Service personnel access their workboat for tunnel operations and maintenance, and (2) provide  
14 motorized access and allow for geotechnical investigations including core sampling (drilling).

15 150. After the draft decision notice and objection review period, in which plaintiffs participated,  
16 the Forest Service split its decision, and on July 26, 2018 issued a decision notice to provide  
17 motorized utility-terrain vehicle access to Spirit Lake at Duck Bay. The Duck Bay route was  
18 constructed in August 2018, and portions were washed away within two months of its construction  
19 and prior to its initial use by Forest Service personnel, requiring repair in summer 2019.

20 151. The landscape scar for this access road is clearly visible from Windy Ridge overlook parking  
21 lot, marring the public’s view. The road serves primarily as a means of carrying Forest Service  
22 personnel roughly 1.5 kilometers to the lake shore, while researchers access the same location on foot  
23

1 (and have done so for decades). In the past, a helicopter was used to carry larger items (such as the  
2 research boat) to the lake shore.

3 152. The Forest Service issued a second draft decision notice focused on motorized access and  
4 drilling on November 6, 2018.

5 153. The Forest Service withdrew the second decision on April 9, 2019, "in order to further  
6 analyze impacts to ongoing and future research and to work towards establishing a monitoring and  
7 implementation group of interested parties." Letter from Angela Elam, Acting Forest Supervisor,  
8 Gifford Pinchot National Forest.

9 **The 2021 Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project**

10 154. Because the 2018 Project was unsuccessful at meeting the purpose and need of the Project,  
11 the Forest Service announced in 2019 that it would again attempt to develop a project to make repairs  
12 to the Spirit Lake tunnel and conduct drilling on the Pumice Plain. The agency finalized its decision  
13 on this project in 2021 (2021 Project).

14 155. The purpose and need of the 2021 Project is to (1) obtain geotechnical subsurface drilling data  
15 to more accurately determine and predict safe conditions for existing and possible future alternate  
16 systems to control water levels in Spirit Lake; and (2) replace the tunnel intake gate structure to  
17 improve lake level management, safety, and monitoring (inspection) of the Spirit Lake tunnel intake  
18 gate.

19 156. To implement the selected alternative, the Forest Service has proposed a number of actions.

20 157. The selected alternative will require the dredging of approximately 7,100 cubic yards of spoils  
21 material from the existing spoils pile in front of Spirit Lake tunnel intake channel, which would be  
22 placed onto a scow barge. Approximately 2,700 cubic yards of suitable dredged material could be  
23 used to construct a permanent access ramp from the lake to the existing helipad adjacent to the tunnel

1 intake. The remaining dredged material would be moved up to 900 feet away from the Spirit Lake  
2 tunnel intake and placed onto the lake bottom.

3 158. The access ramp adjacent to the tunnel intake would have positive drainage and would remain  
4 in place to be utilized for future management activities. Water would be directed across the ramp as a  
5 ford or rerouted adjacent to the ramp. The ramp would be stabilized after implementation to limit the  
6 need for future maintenance.

7 159. Construction of a cofferdam is proposed to stop water flow through the intake channel and  
8 allow access to the tunnel intake gate and intake structure at Spirit Lake. A pump would be used as  
9 needed to evacuate water from the dewatered intake structure area. Additional pumps would maintain  
10 the lake level during construction by pumping water from the lake to downstream of the intake gate  
11 structure.

12 160. The alternative calls for the demolition, removal, and disposal of the existing trash rack and  
13 gate at the intake structure of the Spirit Lake tunnel, and construction of a new intake-control  
14 structure at the remaining intake wall that would include concrete formwork and a cast-in-place  
15 rehabilitated concrete structure. A new trash rack, intake gates, and service platform would be  
16 fabricated and installed.

17 161. Boats and barges carrying equipment and/or crews will need to traverse through the floating  
18 log mat at Spirit Lake. To manage travel through the logs, crews may utilize log broncs or buoy  
19 systems to keep floating logs away from equipment and boats.

20 162. Implementation of this alternative also requires the reconstruction of existing National Forest  
21 System Road 99, and the construction of temporary roads, staging areas, and a barge loading facility.  
22 Improvement of the National Forest System Road 99 extension from the Windy Ridge recreation site  
23 to the researcher parking lot is proposed in order to allow safe passage for trucks. The terminus of



1 National Forest System road 99 extension, known as the researcher parking lot, will be increased in  
2 size by an estimated 0.2 acre for use as a staging area during implementation and material disposal  
3 after the completion of project work. Construction of a staging area could occur at the Windy Ridge  
4 recreation site or the Smith Creek Picnic recreation site, or at both locations.

5 163. Construction of temporary roads would include new materials, road building activities, stream  
6 crossings, drainage features, and other road structures to support access by equipment. The temporary  
7 access road would be a single lane road with intervisible turnouts and periodic turnarounds. The road  
8 surface would generally be 16 feet wide. Some horizontal curves would require curve widening to  
9 allow passage of a truck with a trailer. Seasonal maintenance may be necessary.

10 164. Stream crossings such as culverts or bridges would be used to separate live stream flow from  
11 the temporary road surface. Stream crossing structures would be sized based on time periods to  
12 remain in place. Non-overwintering stream crossings would be sized for expected peak summer flows  
13 and all structures and road fill would be removed from the floodplain at the end of each summer  
14 season and placed in a stable location. Road fill would be separated from existing streambed through  
15 use of geosynthetic material to avoid contamination of and minimize disturbance to existing  
16 streambed.

17 165. Construction would include a 4.5 acre equipment and material staging area in a non-vegetated  
18 area approximately 500 to 700 feet away from Spirit Lake. The staging area would connect to a barge  
19 loading facility by a temporary road with a 25 feet wide road surface. Construction would include a  
20 1.4 acre barge loading facility on the shore of Spirit Lake. Construction activities may include new  
21 materials, earthwork, pile installation, shore ties and clearing vegetation.

22 166. Implementers may be permitted to plow National Forest System Road 99 and Road 99  
23 extension to remove snow from the roadway and access the project site.

1 167. Implementation of the geotechnical investigation and core sampling on the Pumice Plain  
2 would begin when the temporary access road is complete or complete to a condition where equipment  
3 could safely travel the temporary access road, and is expected to take up to five field seasons. Non-  
4 helicopter temporary access roads would be maintained for the duration of project implementation.

5 168. Once at the drilling area, drill vehicles would traverse from hole to hole. It is estimated that 3  
6 to 5 drill vehicles would be used during the operations with approximately 30 personnel onsite. Core  
7 sampling would occur at approximately 30 locations (approximately 104 acres) within the footprint  
8 of the 1982–1983 drilling site. Core samples would be generated from drill holes approximately 100  
9 to 350 feet deep, and approximately 4 inches inside diameter. Each drill site location would occupy  
10 an approximately 100 to 200 square yard area (or up to 1,800 square feet) during drilling operations.

11 169. A temporary submersible pump or floating pump may be installed in Spirit Lake, which  
12 would feed a hose and fill a tank near the lake shore. Water for drilling operations may be brought in  
13 on the temporary access road with a truck or via helicopter. Water from drilling operations would be  
14 disposed as surface run-off. Disposal of drilling mud (composed of bentonite or biodegradable  
15 polymer products used to lubricate drilling equipment) would occur in one or multiple small pits on  
16 the Pumice Plain, the location of which is yet to be determined.

17 170. Workers on the Pumice Plain will utilize pit, vault, or temporary toilets. Overnight camping  
18 will not be allowed.

19 171. In December 2019, the Forest Service published a notice of proposed action for the Spirit  
20 Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project (“Spirit Lake Project”) and  
21 requested public comment on the scoping document. Plaintiffs provided timely scoping comments.  
22  
23

172. In April 2020, the Forest Service released the Spirit Lake Project Environmental Assessment (EA) and Draft Decision Notice and Finding of No Significant Impact (“DN/FONSI”) for administrative review. Plaintiffs submitted timely administrative objections to the EA.

173. On March 16, 2021 the Forest Service rejected all objections.

174. On March 16, 2021, the Forest Service published a final DN/FONSI with an errata attachment to the DN listing changes to the 2020 Spirit Lake Project EA. The 2020 Spirit Lake Project EA and 2021 DN/FONSI are the final agency actions challenged here.

## CLAIMS FOR RELIEF

### FIRST CLAIM FOR RELIEF

#### **Failure to Comply with the Aquatic Conservation Strategy Violates the National Forest Management Act**

175. Plaintiffs incorporate by reference all preceding paragraphs.

176. NFMA requires the Forest Service to design and implement projects that are consistent with the applicable LRMP. 16 U.S.C. §§ 1604(i); 36 C.F.R. § 219.10(e).

177. The Gifford Pinchot National Forest LRMP incorporated the Aquatic Conservation Strategy (ASC) and its nine Objectives (ACSOs).

178. Aquatic Conservation Strategy Objective 2 states: “Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.”

179. The Spirit Lake Project will not maintain and restore the spatial and temporal connectivity within and between watersheds because the proposed road will cross numerous waterways, thus physically disrupting existing stream courses. Currently unobstructed aquatic routes will be

1 compromised from road construction and use. Critical nearshore shallow habitat located along the  
2 south shore of Spirit Lake will be compromised by construction and use of the barge loading area.  
3 This habitat currently provides a continuous longitudinal aquatic corridor, vegetated and interspersed  
4 with large woody debris, utilized heavily by juvenile fish. The barge loading area would disrupt this  
5 corridor and remove valuable habitat.

6 180. Aquatic Conservation Strategy Objective 3 states: “Maintain and restore the physical integrity  
7 of the aquatic system, including shorelines, banks, and bottom configurations.”

8 181. The Spirit Lake Project will not maintain and restore the physical integrity of the bottom of  
9 Spirit Lake because the proposed Project requires dredging of Spirit Lake and redeposition of  
10 dredged materials into Spirit Lake. The shoreline that has naturally vegetated and formed over 40  
11 years after the eruption will be permanently changed by construction and use of the barge loading  
12 area.

13 182. Aquatic Conservation Strategy Objective 4 states: “Maintain and restore water quality  
14 necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain  
15 within the range that maintains the biological, physical, and chemical integrity of the system and  
16 benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian  
17 communities.”

18 183. The Spirit Lake Project will not maintain and restore water quality because water quality will  
19 be degraded by disposing of drilling mud into a very permeable aquifer as a byproduct of the  
20 proposed geotechnical drilling. The Spirit Lake Project will facilitate the introduction and dispersal of  
21 aquatic invasive species (New Zealand mud snails) in currently uninfested waterways and  
22 watersheds.

1 184. Aquatic Conservation Strategy Objective 5 states: “Maintain and restore the sediment regime  
2 under which aquatic ecosystems evolved. Elements of the sediment regime include the timing,  
3 volume, rate, and character of sediment input, storage, and transport.”

4 185. The Spirit Lake Project will not maintain and restore water quality or the sediment regime of  
5 waterways in the Project area because road construction and use will increase sediment delivery to  
6 Project streams and Spirit Lake, and alter the timing, storage, and transport of sediment. The Pumice  
7 Plain has not yet developed a robust soil profile, has little established large vegetation that can hold  
8 sediment in place, and is comprised of unconsolidated ash and pumice that is easily mobilized by  
9 footsteps, let alone road construction. Dredge spoils deposited in Spirit Lake may have unintended  
10 consequences for aquatic life, interrupting the chemistry at the sediment-water interface, potentially  
11 impacting nutrient transport, and burying benthic organisms.

12 186. Aquatic Conservation Strategy Objective 8 states: “Maintain and restore the species  
13 composition and structural diversity of plant communities in riparian areas and wetlands to provide  
14 adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface  
15 erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse  
16 woody debris sufficient to sustain physical complexity and stability.”

17 187. The Spirit Lake Project will not maintain and restore the species composition and structural  
18 diversity of plant communities in riparian areas in the Project area because road construction and  
19 traffic will remove native vegetation at the intersections of the road and all aquatic features (seeps,  
20 springs, wetlands, streams, lake shore). Road construction will alter stream channel dynamics, shift  
21 channels, lead to channel drying and disconnected spring sources, and alter the hydrology of sensitive  
22 wetlands, including around the banks of Spirit Lake.

1 188. Aquatic Conservation Strategy Objective 9 states: “Maintain and restore habitat to support  
2 well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.”

3 189. The Spirit Lake Project will not maintain and restore habitat to support well-distributed  
4 populations of native plant, invertebrate, and vertebrate riparian-dependent species because the  
5 Project will introduce and increase the spread of New Zealand mud snails, which are highly invasive  
6 non-native species that threaten native aquatic biodiversity. Alterations to streams through increased  
7 sedimentation will reduce suitable habitat for juvenile and adult fish and other riparian-dependent  
8 aquatic life. Native plant species surrounding riparian areas will be destroyed, in some cases  
9 permanently, by construction and operation of the proposed road. These plant communities are a  
10 unique and irreplaceable assemblage of the post-eruption successional process.

11 190. Because the Spirit Lake Project fails to maintain and restore the spatial and temporal  
12 connectivity within and between watersheds; the physical integrity of the aquatic system; the water  
13 quality necessary to support healthy riparian, aquatic, and wetland ecosystems; the sediment regime  
14 under which aquatic ecosystems evolved; the species composition and structural diversity of plant  
15 communities in riparian areas; and habitat to support well-distributed populations of native plant,  
16 invertebrate, and vertebrate riparian-dependent species, the Project violates the NFP and NFMA,  
17 which prohibit these alterations to aquatic functions and processes.

18 191. Because the Forest Service failed to designate all unstable and potentially unstable areas as  
19 Riparian Reserves, the Project violates the NFP and NFMA.

20 192. The decision to implement the Spirit Lake Project is arbitrary, capricious, and not in  
21 accordance with NFMA. 5 U.S.C. § 706(2)(A).

22 193. Plaintiffs are entitled to their reasonable fees, costs, and expenses associated with this  
23 litigation pursuant to EAJA. 28 U.S.C. § 2412.

**SECOND CLAIM FOR RELIEF**

**Failure to Comply with the Aquatic Conservation Strategy Violates the National Forest Management Act**

194. Plaintiffs incorporate by reference all preceding paragraphs.

195. NFMA requires the Forest Service to design and implement projects that are consistent with the applicable LRMP. 16 U.S.C. §§ 1604(i); 36 C.F.R. § 219.10(e).

196. The Gifford Pinchot National Forest LRMP incorporated the Aquatic Conservation Strategy (ACS).

197. The Aquatic Conservation Strategy requires the Forest Service to designate and protect Riparian Reserves on “unstable and potentially unstable areas.”

198. The Pumice Plain remains geologically active, and the proposed road will cross unstable and potentially unstable areas. By their nature, the massive and deep deposits of ash and pumice that make up the Pumice Plain are unstable.

199. The Forest Service failed to designate and protect these areas as Riparian Reserves during project development.

200. Because the Forest Service failed to designate all unstable and potentially unstable areas as Riparian Reserves, the Project violates the NFP and NFMA.

201. The decision to implement the Spirit Lake Project is arbitrary, capricious, and not in accordance with NFMA. 5 U.S.C. § 706(2)(A).

202. Plaintiffs are entitled to their reasonable fees, costs, and expenses associated with this litigation pursuant to EAJA. 28 U.S.C. § 2412.

**THIRD CLAIM FOR RELIEF**

**Failure to Prepare an Adequate Land and Resource Management Plan Amendment  
Violates the National Forest Management Act**

203. Plaintiffs incorporate by reference all preceding paragraphs.

204. NFMA requires the Forest Service to design and implement projects that are consistent with the applicable forest plan. 16 U.S.C. §§ 1604(i); 36 C.F.R. § 219.10(e).

205. If a project is not consistent with the applicable LRMP, the Forest Service may amend the forest plan to accommodate the project.

206. When amending a forest plan, the Forest Service “must determine which substantive requirements within §§ 219.8 through 219.11 are directly related to plan direction being added, modified or removed by the amendment and apply those requirements to the amendment in a way that is commensurate with the scope and scale of the amendment.” 36 C.F.R. § 219.13(b)(5).

207. This requirement “does not give a responsible official the discretion to amend a plan in a manner contrary to the 2012 rule by selectively applying, *or avoiding altogether*, substantive requirements within §§ 219.8 through 219.11 that are directly related to the changes being proposed.” Forest Service, *National Forest System Land Management Planning, Final Rule*, 81 Fed. Reg. 90,723, 90,726 (Dec. 16, 2016) (emphasis added).

208. The Forest Service may not simply exempt itself from compliance with a forest plan component or requirement. Instead, the Forest Service must develop new plan content that meets the intent of the old plan content.

209. For the Spirit Lake Project, the Forest Service determined that “the visual quality objective of retention would be exceeded for the project area because project activities will be evident to the casual national forest visitor,” necessitating a forest plan amendment.



210. Rather than preparing new plan content as required by NFMA, the Forest Service simply exempted the Project from the forest plan's visual quality objective of "retention."

211. The Forest Service did not replace the visual quality plan content with new plan content that meets the intent of the visual quality objective of retention (i.e., management activities are not evident to the casual forest visitor).

212. The failure to prepare an adequate forest plan amendment is arbitrary, capricious, and not in accordance with NFMA. 5 U.S.C. § 706(2)(A).

213. Plaintiffs are entitled to their reasonable fees, costs, and expenses associated with this litigation pursuant to EAJA. 28 U.S.C. § 2412.

#### **FOURTH CLAIM FOR RELIEF**

##### **Failure to Consider Direct, Indirect, and Cumulative Effects of the Spirit Lake Project Violates the National Environmental Policy Act**

214. Plaintiffs incorporate by reference all preceding paragraphs.

215. NEPA and its implementing regulations require federal agencies to take a hard look at the environmental consequences of proposed actions and the reasonable alternatives that would avoid or minimize such impacts or enhance the quality of the human environment. 42 U.S.C. § 4332(2)(C)(i); 40 C.F.R. Parts 1502 and 1508.

216. An EA must provide sufficient information for determining whether to prepare an EIS or issue a Finding of No Significant Impact. 40 C.F.R. § 1508.9(a). The information presented in the EA must be of "high quality," and include "accurate scientific analysis." 40 C.F.R. 1500.1(b). The agency must adequately explain its decision not to prepare an EIS by supplying a convincing statement of reasons why potential effects are insignificant.

1 217. NEPA requires that an adequate EA analyze “direct effects,” which are “caused by the action  
2 and occur at the same time and place,” as well as “indirect effects which ... are later in time or farther  
3 removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8.

4 218. An EA must also assess the cumulative impacts, i.e., those resulting “from the incremental  
5 impact of the action when added to other past, present, and reasonably foreseeable future actions.  
6 Cumulative impacts can result from individually minor but collectively significant actions taking  
7 place over a period of time.” 40 C.F.R. §§ 1508.7–1508.8.

8 219. In 2018, the Forest Service analyzed the Spirit Lake Motorized Access for Core Sampling and  
9 Inlet Access Project, the purpose and need of which was to: 1) construct a long-term motorized route  
10 to Spirit Lake in order to conduct in-water operation, maintenance and repair activities at the Spirit  
11 Lake tunnel inlet structure and debris blockage area; and 2) construct a motorized route for drilling  
12 equipment to access the debris field at Spirit Lake to facilitate geotechnical drilling at the debris field  
13 and Pumice Plain, in order to gain more information about the geologic structure and stability of the  
14 debris field. In August 2018, the Forest Service constructed the motorized route to Duck Bay.

15 However, just two months later, before the agency could access Spirit Lake to implement  
16 maintenance and repair of the Spirit Lake access gate, seasonal rains and precipitation washed out the  
17 road, causing extensive damage to the road and increased sediment movement into the entire  
18 downstream length of Willow Creek and its outflow into Spirit Lake. The 2018 Spirit Lake  
19 Motorized Access for Core Sampling and Inlet Access Project EA and the 2020 Spirit Lake Project  
20 EA does not discuss or analyze the cumulative effects from the 2021 Spirit Lake Project.

21 220. One of the two primary needs of the Spirit Lake Project challenged in this action is to conduct  
22 geotechnical drilling and core sampling on the Pumice Plain debris flow. Over the course of up to 5  
23 years, the Forest Service estimates that 3-5 drill vehicles would be used to conduct core sampling at

approximately 30 locations on the Pumice Plain down to a depth of up to 350 feet, causing approximately 104 acres of ground disturbance. Approximately 30 workers would travel to and work onsite during the drilling and sampling. A temporary submersible pump or floating pump may be installed in Spirit Lake to access water to facilitate drilling. Drilling mud would be used to lubricate the drilling equipment, and would be disposed on site. Other than stating that these actions will occur, the EA does not assess the environmental consequences of the geotechnical drilling and core sampling. The failure to consider the direct, indirect, and cumulative effects of the geotechnical drilling and sampling components of the Spirit Lake Project is arbitrary, capricious, and not in accordance with NEPA. 5 U.S.C. § 706(2)(A).

221. The Spirit Lake Project will adversely affect hundreds of permanent research plots located within or immediately adjacent to the right-of-way of the proposed road. Implementation of the Project will temporarily and permanently disrupt the research conducted at these sites. The EA and DN/FONSI do not discuss the environmental consequences to ongoing research, or whether the long-term research studies, of which these plots are an essential component, will be able to continue. The failure to consider the direct, indirect, and cumulative effects of the entire Spirit Lake Project on the ongoing research at the Pumice Plain is arbitrary, capricious, and not in accordance with NEPA. 5 U.S.C. § 706(2)(A).

222. Plaintiffs are entitled to their reasonable fees, costs, and expenses associated with this litigation pursuant to EAJA. 28 U.S.C. § 2412.

## **FIFTH CLAIM FOR RELIEF**

### **Failure to Prepare an Environmental Impact Statement Violates the National Environmental Policy Act**

223. Plaintiffs incorporate by reference all preceding paragraphs.

1 224. NEPA requires the Forest Service to prepare an EIS when a major federal action is proposed  
2 that *may* significantly affect the quality of the environment. 42 U.S.C. § 4332(2)(C).

3 225. In determining whether a proposed action may “significantly” impact the environment, both  
4 the context and intensity of the action must be considered. 40 C.F.R. §1508.27.

5 226. In evaluating “context,” federal defendants must assess the significance of an action “in  
6 several contexts such as society as a whole (human, national), the affected region, the affected  
7 interests, and the locality. Significance varies with the setting of the proposed action. For instance, in  
8 the case of a site-specific action, significance would usually depend upon the effects in the locale  
9 rather than in the world as a whole. Both short- and long-term effects are relevant.” 40 C.F.R. §  
10 1508.279(a). The Spirit Lake Project’s context includes the international, national, regional, and  
11 local value of the project area to scientific research and understanding and appreciation of the natural  
12 world.

13 227. In evaluating “intensity,” federal defendants must consider numerous “significance” factors  
14 including impacts that may be both beneficial and adverse; the degree to which the proposed action  
15 affects public health or safety; unique characteristics of the geographic area such as proximity to  
16 historic or cultural resources, or ecologically critical areas; the degree to which the effects on the  
17 quality of the human environment are likely to be highly controversial; the degree to which the  
18 possible effects on the human environment are highly uncertain or involve unique or unknown risks;  
19 the degree to which the action may establish a precedent for future actions with significant effects or  
20 represents a decision in principle about a future consideration; whether the action is related to other  
21 actions with individually insignificant but cumulatively significant impacts; the degree to which the  
22 action may cause loss or destruction of significant scientific, cultural, or historical resources; and  
23 whether the action threatens a violation of Federal, State, or local law or requirements imposed for

1 the protection of the environment. 40 C.F.R. §§ 1508.27(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (b)(6),  
 2 (b)(7), (b)(8), (b)(10).

3 228. The Spirit Lake Project would have numerous adverse effects to the environment including  
 4 but not limited to increased sedimentation from road construction and use, disruption and termination  
 5 of long-term scientific research, destruction of riparian and other vegetation and unique plant and  
 6 animal assemblages, introduction and spread of invasive nonnative species, disruption of recreational  
 7 access, lost education outreach opportunities, lost training opportunities for undergraduates and  
 8 graduate students, changes to the view from Johnston Ridge Observatory and Windy Ridge Overlook,  
 9 alteration of aquatic process and function, and alteration of the topography of the Spirit Lake bottom.  
 10 The purpose of the project, according to the Forest Service, is to conduct activities that will provide  
 11 for the health and safety of downstream communities by repairing the Spirit Lake gate and access  
 12 tunnel and gathering more information from the Pumice Plain to inform long-term management of  
 13 the Pumice Plain and Spirit Lake, a beneficial effect. “A significant effect may exist even if the  
 14 Federal agency believes that on balance the effect will be beneficial.” 40 C.F.R. § 1508.27(b)(1).

15 229. The need for the Spirit Lake Project is “to ensure the protection of public safety, health,  
 16 property, and the environment from a catastrophic breach of the Spirit Lake natural debris blockage  
 17 caused by the 1980 debris avalanche.” Given the importance of the public health and safety  
 18 justification for the Project, an environmental impact statement should have been prepared. 40 C.F.R.  
 19 § 1508.27(b)(2).

20 230. The Spirit Lake Project would conduct in-water activities at Spirit Lake and construct and  
 21 operate a vehicular road across the Pumice Plain, which are located in the Mount St. Helens National  
 22 Volcanic Monument, an area designed by Congress due to its ecologically critical and scientific  
 23 value. The Project area is also a Class I Research Area. 40 C.F.R. § 1508.27(b)(3).

231. The Forest Service acknowledges that there is a substantial amount of information about the Pumice Plain and Spirit Lake that is unknown. The Pumice Plain and Spirit Lake are ecological features that exist nowhere else on earth, and the Forest Service has never before built, used, and remediated a vehicular road in an analogous ecological setting, because none exists. It is unknown what the short- and long-term effects on ongoing scientific research will be from the Project, which may represent a fundamental loss of irreplaceable scientific information about geologic and biological processes. It is unknown how the further introduction and spread of New Zealand mud snails, a highly invasive species, will affect the newly developing ecology of the Pumice Plain and Spirit Lake. The Spirit Lake Project is likely to have highly controversial effects on the environment, involves highly uncertain, unique, and unknown risks, and an environmental impact statement should have been prepared 40 C.F.R. §§ 1508.27(b)(4), (b)(5).

232. Since the Monument's designation in 1982, the Pumice Plain has been managed for nonmotorized recreation and scientific study. Not since the designation has the Forest Service constructed a road across the geologically active Pumice Plain: indeed, the agency has never before built a road (temporary or otherwise) across an active volcano that is actively eroding and accreting. The Forest Service acknowledges that the Spirit Lake Project is the first step in gathering additional information to support future actions on the Pumice Plain and at Spirit Lake. The project is precedent-setting and may be the first action in a series of actions that lead to dramatic changes in the Pumice Plain's ecology and human use. An environmental impact statement should have been prepared to analyze this precedent, which represents a decision in principle about future management of the Mount St. Helens National Volcanic Monument. 40 C.F.R. § 1508.27(b)(6).

233. In 2018, the Forest Service analyzed the Spirit Lake Motorized Access for Core Sampling and Inlet Access Project, the purpose and need of which was to: 1) construct a long-term motorized route

1 to Duck Bay on Spirit Lake in order to conduct in-water operation, maintenance and repair activities  
2 at the Spirit Lake tunnel inlet structure and debris blockage area; and 2) construct a motorized route  
3 for drilling equipment to access the debris field at Spirit Lake to facilitate geotechnical drilling at the  
4 debris field and Pumice Plain, in order to gain more information about the geologic nature and  
5 stability of the debris field. In 2018, the Forest Service constructed the motorized route to Duck Bay.  
6 However, before the agency could access Spirit Lake to implement maintenance and repair of the  
7 Spirit Lake access gate, seasonal rains and precipitation washed out the road, causing extensive  
8 damage to the road and increased sediment movement into the entire downstream length of Willow  
9 Creek and its outflow into Spirit Lake. The 2018 Spirit Lake Motorized Access for Core Sampling  
10 and Inlet Access Project EA does not discuss or analyze the cumulative effects from the 2021 Spirit  
11 Lake Project, and the 2020 Spirit Lake Project EA does not discuss or analyze the cumulative effects  
12 from the 2018 Project.

13 234. The Spirit Lake Project challenged in this action has two main components: 1) construction of  
14 3.4 miles of road from the researcher parking lot across the Pumice Plain to the old pumping station  
15 to repair or replace the Spirit Lake Access Gate; and 2) construction of a staging area at the pumping  
16 station at the base of Harry's Ridge to provide access to the "drilling area" on Spirit Lake to conduct  
17 geotechnical drilling. The Spirit Lake EA is silent, however, about the ultimate purpose of the  
18 proposed geotechnical drilling, but presumably, the information gathered from the drilling will be  
19 used for future project design and development, indicating that the Spirit Lake Project is simply the  
20 first in a series of projects addressing the use and management of Spirit Lake and the Pumice Plain.  
21 The Spirit Lake Project EA does not discuss or analyze the cumulative effects from the failed  
22 implementation of the 2018 Spirit Lake Motorized Access for Core Sampling and Inlet Access  
23 Project in conjunction with the proposed 2021 Spirit Lake Project.

1 235. The Spirit Lake Project EA does not consider the cumulative effects of the failed  
2 implementation of the Spirit Lake Motorized Access for Core Sampling and Inlet Access Project or  
3 the geotechnical drilling proposed in either the 2018 or 2021 version of the Project. These projects  
4 are likely to have cumulative effects that should have been assessed in a single environmental impact  
5 statement. 40 C.F.R. § 1508.27(b)(7).

6 236. The Spirit Lake Project will temporarily and permanently affect hundreds of research plots  
7 located on the Pumice Plain. This research is unique and cannot be conducted anywhere else in the  
8 world, because no other accessible research location is actively terraforming as is Mount St. Helens  
9 in the wake of the 1980 eruption. Some of this research has been underway since the eruption,  
10 representing long-term study of key geological and biological processes. The Spirit Lake EA does not  
11 discuss the nature of this research or how it may be compromised by the implementation of the  
12 Project. Because the Project may cause the loss or destruction of significant scientific resources, an  
13 environmental impact statement should have been prepared. 40 C.F.R. § 1508.27(b)(8).

14 237. The Spirit Lake Project is inconsistent with the Northwest Forest Plan and Gifford Pinchot  
15 National Forest LRMP, and fails to adequately amend the forest plan as required by the National  
16 Forest Management Act. The Northwest Forest Plan, Gifford Pinchot National Forest LRMP, and the  
17 National Forest Management Act are Federal laws and requirements imposed for the protection of the  
18 environment, the threatened violation of which necessitates the preparation of an environmental  
19 impact statement. 40 C.F.R. § 1508.27(b)(10).

20 238. The Forest Service failed to prepare an environmental impact statement for the Spirit Lake  
21 Project, despite the presence of several significance factors. The Forest Service's decision to  
22 implement and proceed with the proposed Project without first preparing an EIS is arbitrary,  
23 capricious, and not in compliance with NEPA. 5 U.S.C. § 706(2)(A).



239. Plaintiffs are entitled to their reasonable fees, costs, and expenses associated with this litigation pursuant to the EAJA. 28 U.S.C. § 2412.

**PLAINTIFFS' PRAYER FOR RELIEF**

Plaintiffs respectfully request that this Court:

1. Declare that the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment, Decision Notice, and Finding of No Significant Impact violate NEPA, NFMA, and their implementing regulations;

2. Declare that the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment, Decision Notice, and Finding of No Significant Impact violate the Northwest Forest Plan and Gifford Pinchot National Forest Land and Resource Management Plan;

3. Declare that the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment, Decision Notice, and Finding of No Significant Impact are arbitrary, capricious, an abuse of agency discretion, and contrary to law, in violation of Section 706(2)(A) of the APA;

4. Vacate and set aside the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment, Decision Notice, and Finding of No Significant Impact and remand the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment, Decision Notice, and Finding of No Significant Impact to the Forest Service until such time as the agency demonstrates to this Court that it has adequately complied with the law;

5. Enjoin the Forest Service and its contractors, assigns, etc. from implementation of the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project Environmental Assessment,

1 Decision Notice, and Finding of No Significant Impact;

2 6. Order the Forest Service to prepare a legally adequate environmental impact statement  
3 addressing the direct, indirect, and cumulative effect of short- and long-term management of Spirit  
4 Lake and the Pumice Plain;

5 7. Award Plaintiffs their costs of suit and attorneys' fees; and

6 8. Grant Plaintiffs such other and further relief as the Court deems just and equitable.

7  
8 Respectfully submitted and dated this 22nd day of March, 2021.

9 /s/ Susan Jane M. Brown

10 Susan Jane M. Brown (OSB #054607)

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16 *Attorney for Plaintiffs*

**CORPORATE DISCLOSURE STATEMENT**

Pursuant to FRCP 7.1, Plaintiffs state that they have not issued shares to the public and have no affiliates, parent companies, or subsidiaries issuing shares to the public.

Respectfully submitted and dated this 22nd day of March, 2021.

/s/ Susan Jane M. Brown  
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